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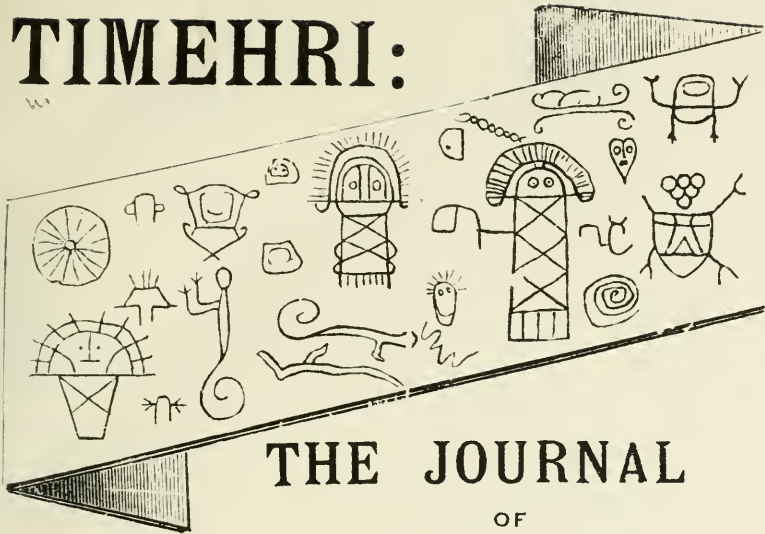
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TIMEHRI:



THE JOURNAL

OF

The Royal Agricultural and
Commercial Society

OF

BRITISH GUIANA.

J. J. NUNAN, B.A., LL.B., *Editor in Chief.*

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TIMEHRI:

THE JOURNAL OF

THE ROYAL AGRICULTURAL AND COMMERCIAL SOCIETY
OF BRITISH GUIANA.

VOL. III.

SEPTEMBER, 1913.

No. 1.

FOREWORD.

His Excellency's speech at the Society's Rooms during the debate on the development of the Colony referred to the special interest which the present Secretary of State, Mr. Harcourt, takes in the fortunes of this country. Mr. Harcourt, in the annual summary of colonial affairs by which he has elected to render to Parliament an account of his stewardship, has told us that a Harcourt ancestor of his in the days of James I. received a grant of this part of the world and actually set out to take possession. He was forced to return, probably owing to a mutiny, as the beer on board his ships turned sour. But for the dishonesty or carelessness of a London brewer, the present Mr. Harcourt, as he humourously reflects, might be President of Venezuela or of some United States of Guiana instead of Secretary of State for the Colonies. We hope to secure in time for our next issue an article on the Harcourt Expedition to British Guiana. Meanwhile we can congratulate ourselves that any rational schemes of development are certain to receive most sympathetic consideration from the descendant of one whose imagination was fired in those early days by the possibilities of the land of El Dorado. The effect of this direct interest is apparent in many directions and lightens the somewhat depressed condition which the continuance of the drought has produced in some departments of the colony's activity. The drought compels us to concentrate our attention upon drainage and irrigation and shows that unless practical projects can be formulated and carried into effect, cultivation for non-capitalists must always be precarious on the coast-lands. At the time of going to press the selection of a hydraulic engineer is announced so that we shall soon be provided with expert opinion. Meanwhile His Excellency's expedition to the Rupununi savannahs in company with a railway engineer, although not an exploration survey in the stricter sense, has aroused hopes that we are on the eve of abandoning *a priori* methods and of acquiring some of the material on which may be based the scientific consideration of any scheme for opening up the interior and securing access to Manaos, the progressive capital

of the Amazon Valley. Whether one can be done without the other is still a subject of controversy. Some are satisfied that a development railway should end in the bush and that we should rely upon internal possibilities alone. Many shrink from the very idea of Georgetown (improved to the rank of a first-class port under Baron Siccama's projects or under some newer scheme) becoming the Northern terminus of one of the numerous lines now reaching up through the Matto Grosso to Manaus or being surveyed from that gang-lion through Northern Amazonas.

This magazine has only one railway policy and that is the ascertainment of all the data. The Royal Agricultural and Commercial Society of which it is the organ is not likely to repudiate any legitimate ambition of the colony which is based upon such an investigation. But the friend who told Hon. C. F. Wieting in London a year or two ago that what was wanted in the colony was a little more imagination has laid his finger upon the great intellectual deficiency which tends to paralyse our population as pioneers. Without that saving gift Cecil Rhodes would never have planned the railway and telegraph which have given to the British Empire Africa South of Lake Tangayika, nor would Stratheona and Hays with their associates have covered Canada with a network of railways and with hundreds of thousands of homes. To increase our population we must consider whether we cannot afford to offer the necessary inducements to settlers which other countries have thriven by advertising. Schemes of colonization which have partially succeeded in this country in the past or which are succeeding to-day in tropical and sub-tropical Brazil may not be beyond our reach. If East Indian indentured immigration continues and whether it continues or not the present system might perhaps be supplemented by the introduction of whole families. A better class of cultivator and a labourer less amenable to outbursts of furious excitement might thus be secured. The incidence of cost could be so arranged as to impose upon the sugar planter no more of the burden than his fair share. It is easy to undervalue the services of the latter to this colony in the past and it is only when a sugar estate goes out of cultivation that one thinks of estimating the disastrous loss to the community which such an event entails. By the collapse of the New Colonial Company we are threatened with the loss of four. There are many indications that the proprietors are beginning to realize the value of the personal equation in their relations with the colony and the colonists should not fail to take advantage of the change. When therefore the managing director of a great and exclusively planting firm, like Mr. C. Sandbach Parker, identifies himself so far with the general fortunes of the country as to formulate a scheme of development, which he has done in his recent address at one of the Royal Colonial Institute City luncheons, it should receive most careful study and attention from every citizen. Adequate discussion has not been forthcoming hitherto. Prominence has therefore been given to it in the introductory address to the debate on the development of the colony. On the question of expense Hon. C. F. Wieting at the same meeting

has summed up all that can be said on the subject. Risks, he said, cannot be avoided. It is better to encounter them than to face the slow strangulation of our present decline. To develop our inheritance we must be prepared to meet the initial cost.

In short the economic side of this magazine will set itself in future to the accumulation of the data bearing upon (1) the making of Georgetown a first-class port; (2) the opening up of the interior by a frontier railway aiming at becoming the Northern section of a South American trunk line; (3) the irrigating and draining of suitable areas on the Corentyne and on the East Coast Demerara and West Coast Berbice for future settlement; (4) the introduction of an annual supply of labour and population of a suitable class in the shape of whole families by proper inducements, East Indians for the Coast and Europeans and Africans for the Savannahs being preferred; (5) the financial questions attending any attempt to carry out such enterprises individually or as a whole and their general effect upon taxation, revenue and public debt; (6) as incidental to some of the foregoing the ascertainment of the market possibilities of our colony timbers and our savannah cattle of which we are in complete ignorance. There is nothing new about this programme of investigation. If carried out even in part as a constructive policy it will be only an imitation of what has been done elsewhere by poorer but more enterprising communities.

The present number begins the third volume of the new series of *Timohri*. The two special numbers of the Colony Volume have done yeoman service and have received a very large circulation. The extra expense entailed by the wide distribution of the magazine in countries where it might usefully advertise the colony has been borne cheerfully by the Society and in time should reap a worthy harvest of return. The number of enquiries as to land, cattle and timber possibilities, which it has called forth from places as remote from us as the Argentine and the Transvaal are a hopeful sign. The scientific articles have also received full recognition in learned circles, some receiving the honour of mention in authoritative catalogues. The articles on our native Indians have aroused special interest. The new volume, we hope, will not fall below the standard already attained and which in the course of time we hope to surpass. Subject to the scientific object and avoiding political questions its great aim is the creation of an informed public opinion in the colony on all questions which affect its welfare. For that purpose, no editorial responsibility is assumed for signed articles and our pages are open to suitable contributions from members of every race, religion and class. The Presidential Address of Mr. J. B. Laing has been included.

[The Editor-in-Chief desires to record his special obligations to Rev. James Aiken, the Scientific Assistant Editor, who completed the preparation of the last number during his absence and who has actively collaborated in the present issue. To Mr. J. Rodway, Assistant Secretary of the Society, among others his thanks are also due.]



Clump of *Euterpe edulis* (Manicole palm) with *Pritchardia pacifica* on the right and Colony House in the background.

FAN PALMS AND POND FLOWERS.

By EDGAR BECKETT.

Possibly it is because one knows the trees, or at least a large proportion of them, that the delightful little gardens in New Amsterdam are a never-failing source of pleasure.

We have often been surprised at the small amount of interest and pleasure the inhabitants of New Amsterdam appear to take in these gardens, in spite of the fact that they are easy of access and the town itself has, apart from them, very little that can claim to be attractive.

For the most part, unless some concert is conducted there, or on the rare occasions a band of music is present, the gardens are practically deserted except for a few nursery-maids and their pretty little charges. Sunday afternoon is an exception, then the lads and lasses of the town congregate there bravely dressed in their Sunday best; but we fear the beauty of the place does not appeal to these, as for the most part they are roystering youths and giddy girls, who for one afternoon in the week are free to use this dainty little spot to disport themselves in their fancy frills and ribbons

This, of course, can be readily understood, but how the more intelligent fail to find in them the one spot where one exempt from public haunt,

“ Finds tongues in trees, books in the running brooks,
Sermons in stones and good in everything,”
is not so easily accounted for.

The gardens themselves, we believe, are only about a quarter of a century old, a fact which strikes one who is not accustomed to the rapid rampant growth of the tropics as amazing. Infancy is the least interesting stage in gardens, if not in children, but the passage from baby-hood to sturdy young manhood, in a tropical garden is so fast that despite of its twenty-five years, these gardens have become already, and have been for many years past, very much too small. Interesting as they are, they would prove very much more so, had the original plan allowed for the occupation of a much larger area—even to thrice the size. As it is, man's unromantic hands have to be continually occupied in severe pruning, and sacrifices must be made to keep riotous, tropical Nature, within the bounds of the iron rails that enclose as sweet a spot as is to be found in the whole Berbice county. Already, as if impatient of her iron boundaries, Nature bursts over and through them, and if she had her way they would serve as but small impediments to her vigorous progress.

N.B. For the beautiful pictures illustrating this paper I am indebted to the Rev. J. Whyte MacGill, M.A., who kindly took the photographs for me and lent me a negative of the lake taken by him twelve years ago.

All Berbicians should remember that they owe these gardens, which have sprung up on an infertile, heavy clay, to the tender care of that distinguished Botanist, the late G. S. Jenman. We may erect clocks and what not to his memory, but such stand for nothing, when we bear in mind that his hands raised such fitting and glorious memorials as the Botanic and Municipal Gardens in Georgetown and the Gardens in New Amsterdam.

Clocks under such circumstances, we must admit, appear banal, when we think of the many dream spots created by him on this muddy foreshore, which woo us to

“ that sweet mood when pleasant thoughts
Bring sad thoughts to the mind.”

Sturdy old Keeper Hunt, who hailed from Barbados, worthily carried out his trust until February, 1902, after tending these gardens for twenty years. His, we believe, was a labour of love, and now he has but lately been gathered to his fathers full of years, he also should not be forgotten when we revel in the delights that these gardens afford. The present keeper, Nardamuni, who succeeded Hunt, has followed worthily in his predecessor's footsteps, while the County Agricultural Instructor must be congratulated on the air of brightness and gaiety he has introduced into his borders and beds, by an effective display of colour. Too often a tropical garden, contrary to the English idea, is sadly lacking in colour. True it is that individual plants, here and there, dazzle us with the daring brightness of their flowers, but the total effect is very often a sombre one.

Mr. Rodway and others have described vividly enough to us, the terrible struggle for existence that is always going on in the Guiana forests. To the trained eye this, of course on a minute scale, can be seen in these Gardens.

Owing to the fact that the space occupied by the Gardens is much too small, a constant struggle for more and more room is ceaselessly going on in bed and border, needing the ever watchful gardener's eye to check, here a rampant growth of hibiscus thrusting its flame-coloured flowers everywhere, and there the sturdy vigour of a *Tabernaemontana* or *Ixora*, while the pruning saw has to despoil a *Pachira* or a *Cedrella* of many a lusty limb. But let us take a closer peep.

First and foremost must we mention the statuette of Victoria the Good of blessed memory. There the familiar bust stands all covered with a profusion of *Bougainvillea* whose purple-tinted bracts display a never-ending blaze of colour lovingly embracing the pedestal and twining, ever so gently, a frame of beauty round her—a fitting memorial to the undying name of her late revered Majesty. This was erected, according to the inscription, in the Jubilee year of our Queen, so that this tribute appears to be about as old as the Gardens themselves.



THE LAKE—at the present time, clump of *Carludovica palmata* on right margin.



THE LAKE, as it appeared twelve years ago, with nelumbium lilies and on margin.
The Traveller's tree (*Ravenala* sp.)

Then are the glories of the lake disclosed to us. There we find the light and dark pink *nymphæas*, their rose-coloured flowers floating on the bosom of the dark waters, which have come to feed this artificial lake, all the way from the bounteous waters of the Canje.

At one time the *nymphæas*, beautiful though they be, with their delicate shade of pink and charming leaves, were surely eclipsed by the pink flowers of the mystic lotus—*nelumbium speciosum*. Probably its vigorous growth has accounted for the banishment of the lotus. It can, however, still be seen, persistent enough, in one of the trenches of New Amsterdam, where as we watch the little silvery drops of water as they roll off the leaves after a shower of rain, owing to a special protection of the leaf-surface, few of us realise that these *nelumbiums* were not objects of veneration to the Egyptians alone, but they found worshippers in far off China and Japan, India and Tibet, and we believe they yet play an important part in the religious ceremonies of these countries, even to-day.

Herodotus that "Father of History," as Cicero calls him, mentions the lotus lily on several occasions. "They are lilies like roses," he says, "that grow in the river, the fruit of which is contained in a separate pod, that springs up from the root in form very like a wasp's nest, in this there are many berries fit to be eaten of the size of an olive stone, and they are eaten both fresh and dried." Euterpe II. 92.

Even to-day our boys and girls love to eat the "nut-like" fruit that is found in the wasp-nest pod. So that our thoughts can be carried back, by an action so simple, to 450 B.C. The fibres of the leaf-stalk are said to be made into wicks by the Hindu and burnt before his gods. Fringing this pretty picture of pink and green are clumps of feathery bamboos, aquatic ferns and grasses and our indigenous *Hydroleia spinosa* with its delicate blue flowers, which give no suspicion of the cruel nature of the thorns with which this plant is amply armed. Nor must we fail to mention a fine clump of *Carludovicia palmata* at the sight of which luxuriant growth at the edge of the lake we conjure up visions of a trade in Panama hats, for it is from this palm that these famous hats are fashioned. Right over the brink the *Nipa fruticans* palm hangs its feathery leaves, laden with its large queer-shaped bunches of fruit. This is a plant interesting to all botanists, for it is said to be the only representative of the genus: "the fruit is a one-seeded drupe, aggregated in heads as large as that of a man. The foliage called Nipah is used as a thatch, and when burnt yields a supply of salt. From the spadix toddy is extracted, convertible into syrup, sugar, vinegar, yeast, and a strong spirit. The kernel of the fruit is edible." (The Treasury of Botany—Dr. Seemann).

Then we cannot fail to be struck by a magnificent clump of Traveler's palm (*Ravenna* species), so-called because of the water it stores in the sheaths of its leaf-stalks, which is supposed to quench the thirst of many a weary and sore-footed voyager. Its growth can be seen by the pictures showing its appearance some time back and at the present moment.

These clumps with their fan-shaped leaves are most conspicuous, but their noble beauty to be appreciated should be seen on a moonlit night, when all these gardens are bathed in a witching light that makes them look indeed like fairyland. Nearby the lake are clumps of *Raphia flabelliformis*, a genus of palms which is very limited as to the number of species, and which locally is dear to the heart of our native boys from the short walking-stick stems they furnish, while one's attention must be arrested by a small clump of native Bamboo grass or rather *Guadua*, fine specimens of which are to be seen at Cabacaburi where they were planted by Archdeacon Heard, who, we believe, brought them from the Waini river. They start from the base with a fair girth gradually tapering to a point, and are grey-ringed at the joints and are armed with a terrible array of thorns. Around are picturesquely displayed such palms as *Cocos plumosus*, *Areca catechu*, the betel-nut of the Hindu, *Livistona australis*, all possessing beauty and grace of their own.

The handsome *Areca catechu* is often cultivated for the sake of its fruit, pieces of which are rolled, with a little temper-lime and other ingredients in a "pan" leaf, and are then chewed by our East Indian fellow-subjects—whose red-stained mouths and saliva owe their vivid hue to this habit of masticating their beloved betel-nut.

The Colony House grounds were ceded by the Public Works Department to the Botanic Gardens in 1906, the responsibility for planting which devolved on the Head Gardener of the Botanic Station. For the most part the laying out has been well done, but we cannot congratulate the individual who planted the area facing the Esplanade. Here several huge and beautifully shaped Sand-box trees (*Hura crepitans*) make an imposing and majestic show to the entry of Colony House, and at the same time fulfil the prosaic purpose of sheltering many from the robust kisses of Phœbus. Unfortunately the ground beneath these trees has been thickly planted; amongst others there being *Chrysalidocarpus lutescens*, the sugar-cane palm, and a *Clusia* whose glossy-green leaves, polished always to a state of brightness, cannot fail to attract attention. But two *Livistonas* have already reared their heads amidst the branches of the sandbox trees. Shut out from the light and air, theirs must be a cruel lot. Indeed this small portion of ground is the one blot on what otherwise is a perfect picture.

Near what used to be a public entrance before the Colony grounds were taken over, are two stately *Pritchardia pacifica* palms. The stiff fan-shaped leaves are of a fine green colour, the young leaves being coated with a delicate, soft, downy substance. The black cherry-like fruit is also pretty, whilst the dead grey leaves, clasping the spineless stem of their parent as if loathe to leave her, add to the beauty of one of the finest palms in the gardens.

As we wander in we cannot fail to admire the specimen of that elegant palm, known botanically as *Caryota urens*, with its strange pinnate



The Traveller's tree (*Ravenea* species)—clumps of Spanish dagger on left.



Couroupita guianensis—showing clusters of flowers.

leaves so sharply but picturesquely notched. The leaflets will well bear examination. It is to Ceylon and India we owe this beautiful stranger.

What too can be more lovely than the fan-shaped leaves of the *Licuala grandis* when they escape the rude treatment of the wind and remain unscathed!

The well-armed *Martinezia*, bristling with spines both on trunk and leaf-stalks, is as vigorous as a palm belonging to tropical America should be, but for all its armed appearance its handsome pinnate leaves with their jagged ends invite us to approach.

Though we should like to see more of our own beautiful palms growing in these gardens, we yet can boast of some. The familiar Manicole (*Euterpe edulis*) is so well-known to most of us that we are apt to pass over its beauty and grace. These clumps are moisture-loving and those responsible for the Garden should be proud of having kept them fresh and vigorous throughout the terrible drought we have just recently experienced.

We all know how useful the Manicole palm is to the Indians and sojourners in the interior. The stems are commonly used as floors or split to make palings and so forth, whilst the "heart" or terminal bud can furnish an appetising dish.

The single, solitary *Euterpe stenophylla*, the Rayhoo of the Arawaks, is very much like the Manicole, but is never found growing in clumps. It possesses a delicate lady-like air that places it in the first rank of our native palms, renowned for grace and beauty. We should like to see more of them planted here, and as these gardens are fairly well-drained they should thrive even better than the manicole, for unlike its sister it does not appear to appreciate swampy land.

We cannot fail to be impressed with that noble genus of the palm family, the *Maximiliana*, which is renowned for its stately glory throughout the botanical world. Nor must we tear ourselves away from these beautiful pictures without a word concerning the light green stems and the brilliant red-stained sheaths of the *Cryptostachys renda*, which like most palms, calls aloud for the painter's brush and skill, even as the specimen of *Corypha elata* may set free the poet's tongue with its imposing majesty, when it shall have reached maturity and sent forth its marvellous flowering spike.

One can never tire of the palms displayed in this small area; we have mentioned a few but there are many others of equal interest and beauty.

During the drought the display made by the well-known euphorbiaceous shrubs, *Poinsettia*, with their bright red bracts formed a grateful colouring when the eye was weary of the listlessness and dulness Nature was forced to assume. In sharp contrast to the Poinsettias were

the *Mussaenda frondosa* plants, with their small deep yellow flowers showing strikingly against the pale-yellow, almost white, calycinal leaf. The effect is most uncommon. This leaf, on examination, proves to have an entirely different venation from that of the stem leaves, a fact which the casual observer may probably lose sight of.

All of us know the common Bat-seed tree (*Andira inermis*), but many Berbicians fail to recognise in the magnificent specimen near the entrance opposite to All Saints' Scotch Church, a species of *Andria*. When the tree bursts into bloom it forms a picture that few lovers of Nature will easily forget. Just recently it presented a show of flowers that has never yet been surpassed. The pea flowers possess lilac-tinted petals of a particularly soft shade, which form an effective contrast to the flower-stalks. When not in bloom, its liberal foliage of dark green is in itself handsome enough. We have never seen a finer specimen of *Andira* than this one now growing in the Colony House grounds. Near this giant is *Spathodea campanulata*, whose reddish-orange coloured bell-shaped flowers claim more than passing attention, when they are on show. This genus belongs to *Bignoniaceæ*, an order well-known for the beauty of its flowers, to which the lovely *Jacaranda*, now in flower, is by no means an exception. Its blue panicles of flowers are always admired even by the most casual of visitors. At present they are a striking feature.

At one time, facing the entrance to the old Berbice Cricket Club's grounds, there was a representative of the conifers in the shape of a Norfolk Island pine (*Araucaria excelsa*), which unfortunately, after leaning at a dangerous angle for many years, fell down when it had reached a height of eighty-six feet, on Good-Friday morning, 1907. This is very much to be regretted, as it was a striking object, and would have been still more so, had it lived to attain the height it is said to reach in its native habitat, namely, 200 feet. But Australia is represented by the melaleucas and Eucalypti which grow readily enough in most parts of British Guiana.

There are two specimens of the sturdy Cannon-ball tree (*Couroupita guianensis*) which give evidence of the hardy nature of this wonderful tree. The flowers spring from the trunk and branches and will well repay examination, while the large familiar cannon-ball fruit is wonderfully realistic. It is supposed to be a native of this colony but in all our wanderings in the "bush" we have never seen it, though another genus of the *Lecythidaceæ*, the Monkey Pot (*Lecythis ollaria*) is fairly common.

Space has been found for the Long John (*Triplaris surinamensis*) so familiar and useful to all wood-cutters, and we are glad to see a handsome specimen of the Tamarind (*Tamarindus indica*), always a pleasant sight because of its graceful feathery foliage, and its pretty racemes of flowers.



Flower of *Couroupita guianensis* (the Cannon-ball Tree) showing the six petals and characteristic hood with anthers.



Couroupita guianensis.

Less conspicuous is the well-known cinnamon tree, near to which can be discovered a specimen of *Castilloa elastica* (the Central American Rubber tree) hidden away as if ashamed of the notoriety the boom in rubber has given every tree that produces rubber-bearing latex. It, nevertheless, is ambitious enough, for it is now shyly flowering.

Of course the gaudy flamboyant (*Poinciana regia*) is to be met with, nor do the pretty Queen of Flowers. (*Lagerstræmias*) go unrepresented. No tropical garden would be complete without these and the many variegated Crotons, but not all Barbicians know where to find the spot where a Cacao tree and a large Pear-shaped Guava are to be found, tucked away comfortably enough.

The screw-pines (*Pandani*), are represented by a specimen at one of the gates, its rapid and somewhat bulky growth, kept however in due bounds. The "Doctor-Doodle" (*Caesalpinia*) is there too in all its pride, and the various Hibiscus are not to be denied.

Daintily planted rosebeds are everywhere, and properly made up borders of bright flowering annuals are at times a distinct feature. *Panas* and *Malpighia*, as usual, are made to serve fencing purposes with effect. *Acalypha*, *Pentas*, *Eranthemum*, *Gulpinias*, *Petrea* and a hundred other shrubs are all tastefully arranged.

The Frangipanni (*Plumeria*) has not been forgotten, the one favoured being the pink-tinted flowering variety.

The Lucky-seed (*Cerbera thevetia*) is at present fruiting heavily, in one of the borders, handfuls of the seed can be gathered in a few minutes. We must not forget another favourite which is, at the time of writing, producing quantities of seed and that is the liquorice or crab-eye vine (*Abrus precatorius*) which is to be seen twining around one of the palms. Inconspicuous as its white flowers are in contrast to the shining scarlet seed with a black spot at one end, the whole delicate vine is nevertheless attractive. The crab-eye seeds are often used for necklaces and other ornaments, but it has been said that in India they are employed as a standard of weight and that the far-famed Koh-i-noor diamond was weighed in this manner.

We must not pass over the handsome specimens of various *Agaves*, nor an interesting and pretty specimen of *Erythrina*, nor should we forget that our imposing Locust tree (*Hymenaea courbaril*), is also to be found, though it has attained nothing like the enormous size of its brothers in the forest. At present it is nervously producing a few pods of fruit. The splendid specimen of a *Puchira* or Wild Cacao must also not be omitted.

A visit at any time is full of pleasure whether it be in the cool morning hours soon after daybreak, when the numerous birds are full of thankful song as they hunt for their morning feed, or at midday when

bird-life is still, and we find the shrubs, some striving manfully enough to keep a brave show under the fierce heat of the sun, others apparently glorying and revelling in the heat, others again happy and contented under the protecting shadow fitfully thrown by some large neighbouring tree. Whilst in the evening, though the glory of the lake is faded, the closing of leaf and the cheerful flight of the birds as they wing their way back to their nests, furnishes a picture of peace and restfulness, quite as pleasant as the morning's scene, when life and activity was to be seen on all sides.

Romantic as these grounds are it is not surprising that Jack will whisper "sweet nothings" in Jill's ear, but it is amazing to find many looking upon them as merely a convenient short passage from one street to the other.

A visit intelligently made can, with the honest use of one's eyes, lead us to a world as full of interest as the scene is fair.

THE BRITISH GUIANA BANK.

BRIEF HISTORY.

BY J. VAN SERTIMA.

Colonial institutions are not of long life, and this for a variety of causes which we need not stop to enumerate or examine. There are exceptions to every rule, of course; and the British Guiana Bank is a gratifying illustration of longevity in the case of commercial establishments. It is a kind of institution that is as breath to the nostrils of commerce, and if all is not well with it, all cannot be well "on the Rialto." The British Guiana Bank, the oldest financial institution in the colony, was fortunate in the opportunity of its birth. It was formed in the year 1836, at a time when there was much need for an establishment of its kind, and it met with all the support and success that its promoters anticipated. Compensation money for the liberation of the slaves had been paid, and so there was a good deal of money in the colony for profitable investment. The bank met this want so far as the planters and commercial men were concerned. Thanks largely to the prescience of the Governor, Sir James Carmichael Smyth,* Government savings banks were also established, and these supplied the wants of the labouring and artisan class.

The formation of a local banking company was due to the initiative of a Scottish gentleman named Hugh Robertson. He had begun his career in the Inverness branch of the Royal Bank of Scotland; and in 1830 he was engaged in business in Water Street, Georgetown. He saw the great necessity there was for a bank, one reason in particular therefor being the high rate of exchange. Mr. Robertson's well-meaning efforts did not at first meet with success, owing, it is said, to "the opposition of the colonial section of the Court of Policy." In May, 1832, a circumstance occurred which exercised the public mind not a little and

*A bust of Governor Smyth may be seen in the Town Hall, New Amsterdam, in the manager's office of the British Guiana Bank, Georgetown, and in the vestibule of Colony House, Berbice. Beneath the bust in the last-mentioned place is a marble tablet with the following inscription:—"To the memory of His Excellency Major-General Sir James Carmichael Smyth, Baronet, C.B., K.C.H., K.M.T., K.S.W., etc., late Governor and Commander in Chief of British Guiana. This monument was erected by the inhabitants of the county of Berbice to testify the respect in which His Excellency was held by all classes of this community and more especially to mark their sense of approbation of the system pursued by him in administering the government of this province during a most important period of colonial history when the state of society in the British West Indies was undergoing such rapid and important changes as were involved in the transition from slavery to unqualified freedom; the manifest success which attended the system of apprenticeship in this province is ascribed, under the guidance of Divine Providence, to the energy, wisdom and firmness of this distinguished officer who was honoured as the instrument for conducting in this colony the grand experiment, but who was not permitted to witness the completion of the work, being cut off by the hand of death after a short illness of four days at a time when busily engaged in the duties of his Government on the 4th of March, 1838."

clearly showed that a bank was much needed. Some business premises belonging to Messrs. H. and W. Howes and purchased for 25,700 guilders (the value of a guilder was then 1s. 8d.) in 1828 were forced into the market after they had been considerably improved and were worth 67,000 guilders. The owners happened to be indebted to a Dr. Webster (who had died) to the extent of between 18,000 and 20,000 guilders. The executors in the colony, having received orders from the heirs in England that the estate should be closed as early as possible and the moneys remitted to them, peremptorily placed the Howes' property in the open market, where it fetched only 25,000 guilders. "The Royal Gazette," remarking on the sacrifice, asked if such a thing could have been possible had there been a well-conducted banking establishment available for accommodation. Soon after, Pln. Taymouth Manor had to be bought in, and the property fetched only 200,500 guilders, "a sum that did not cover the mortgage demands, and leaving the mortgage minus upwards of £25,000."

In April, 1836, intelligence reached the colony to the effect that the Colonial Bank was about to be formed in England with a capital of two million pounds in shares of one hundred pounds each; and soon after some Liverpool merchants interested in the colony set on foot a project to start a joint-stock bank here with a capital of £300,000 in £25 shares, of which 4,000 were to be reserved for local subscription. Then came forward again Mr. Hugh Robertson. He issued a prospectus with the object of starting a bank under the name of "The British Guiana Banking Company." The scheme was looked upon with much favour, the Governor himself being among the first to subscribe. The shareholders met for the first time on the 7th of September, Hon. J. G. Reed, of Dochfour, presiding. A committee, one of whom was Mr. J. Lucie Smith (afterwards Attorney General) father of the present Chief Justice of Trinidad, was appointed to frame rules and arrange the necessary preliminaries. They recommended that application should be made to the Legislature for an ordinance to establish a bank to be called "The British Guiana Bank": the capital was to be 4,200,000 guilders in 700 guilder shares, and that the bank should be allowed to do business when 2,100,000 guilders had been collected from the shareholders. The first directors were: Hons. John Croal and J. G. Reed and Messrs. Charles Benjamin, William Johnson, Alexander Glen, John Lane, G. J. Traughton, jnr., Abraham Garnett, and James Holmes. The first secretary was Mr. Frederick Verbeke.

In October the Court of Policy met to consider the memorial of the subscribers for a charter of incorporation, but just before this the Colonial Bank protested on the ground that the establishment of a local bank was an infringement of the Colonial Bank's Royal Charter. In the Court the opposition on behalf of the Colonial Bank was conducted by Hon. Peter Rose who had been provisionally appointed manager of that bank. He had a worthy opponent in the person of Hon. John Croal. The opposition failed and the ordinance to incorporate the British

Guiana Bank passed through all its stages in November. It was not until the 16th February in the next year (1837), however, that the bank began business, with Mr. George Robertson as manager, and Mr. J. H. Bonner as accountant. The Berbice branch was started on the 6th of March. It was customary for some time to advertise in the newspapers the names of the directors in charge of the bank each week; and at public dinners "The British Guiana Bank" usually figured on the toast list. The Colonial Bank, which opened business on May 1, kept its accounts in dollars and cents, but the other one in guilders, stivers, &c., until the decimal system came into authorised general adoption, that is, in February, 1839. The first half-yearly meeting was held on the 24th July, 1837. In their report the directors stated that they had it in contemplation to limit the issue for the time being to 1,000 shares in order to fulfil the stipulations of the Act of Incorporation, requiring 4,500 shares to be subscribed for by the end of the year. Forty per cent. had been paid on 3,509 shares which were held by 345 shareholders. At the end of June the deposits in the bank had amounted to f684,780:79 cents and on the 15th of the next month they had increased to f821,801:16. The announcement was also made that the old-established banking firm of Messrs. Smith, Payne and Smiths, of London, had been appointed agents for the bank—a connection which has been unbroken to this day. For the short time the bank had been in existence it had f22,497:74 in its favour, after payment of about f80,000 for preliminary expenses as well as its ordinary current expenses. No payment of a dividend was recommended, but at the next half-yearly meeting a dividend at the rate of 6 per cent. per annum was declared. Before the third meeting came round, on July 24th, 1838, Governor Carmichael Smyth died of yellow fever. He had been a good friend and staunch supporter of the bank, and had done his best to improve the colonial currency.

At this time the capital stock of the bank consisted of 6,000 shares, 50 per cent. of which had been paid. In April, an ordinance had been passed amending the charter of 1836, requiring, *inter alia*, that the bank notes should not be less than \$5, "payable on demand in dollars of the acknowledged weight and fineness of Spanish dollars" and that the corporation should not find money or make advances in respect to real property. Mr. Croal, who retired during the year, was succeeded by Mr. A. Glen. The other gentlemen on the board of directors at the beginning of 1839 were: Messrs. B. J. Traughton, jnr., A. Garnett, Colin Simson, J. Christy, A. E. Luthers, Charles Benjamin, A. Vyfhuis, and John Cameron. The staff consisted of Mr. G. Robertson, manager and cashier; Mr. J. H. Bonner, accountant; Mr. James Waddell, assistant accountant; Messrs. James Robertson and John Rose, tellers; D. J. Lucie Smith, jnr., was standing counsel; Mr. Andrew Galloway, the bank's solicitor, and Mr. F. Verbeke its secretary. At the Berbice branch Mr. A. Bone was cashier and Mr. John Dyett accountant. At the fourth half-yearly meeting the payment of a dividend of 6 per cent. was recom-

mended. An amount of £300 was awarded to Mr. John Jones for his valuable services in connection with the "final obtainment" of the charter. His zeal and perseverance in advocating the privileges and interests in the British Guiana Bank had helped largely to overcome the powerful and influential opposition the charter had encountered.

In July, 1841, the directors had to deplore a commercial failure through which the bank sustained its first loss. The failure in question was that of Messrs. Traughton, Bros. & Co., one of the partners of which firm had been a director of the bank. There was a crisis in the following year to which the directors alluded in these terms:—"Since the half-yearly meeting, the general condition of the colony has suffered considerable depression in its agricultural and mercantile relations, consequent on a short production and a fall in the price of the staple articles. The directors of the bank have in these circumstances evinced every desire to alleviate difficulties and afford assistance, and they propose to continue every reasonable accommodation to the public, compatible with a prudential action and a due regard to the interests of the corporation." Upon the retirement in 1843, of Mr. George Robertson, the manager, Mr. Verbeke and Mr. Bonner held the post in conjunction. Soon after, the bank sustained a loss, this time through the dishonesty of one of its employees, and to the extent of \$17,000. Referring to this loss, the report stated:—"The frauds of the late assistant accountant were confined to the pass books of some of the bank's customers, and to errors of addition in the account current balance book kept by him. They were facilitated by the unwary issue of cheques by customers to protect errors in their pass-books which the assistant accountant himself purposely made in order to obtain the cheques (Since that time there has been only one fraud in connection with the bank). Owing to the loss a dividend of only 2 per cent. was declared. The dual management already referred to was discontinued in 1844 when Mr. Verbeke alone managed the concern. Since Mr. Verbeke's time the following gentlemen have been managers of the bank:—Messrs. Alexander Garnett (at one time its chairman), G. L. Davson, G. W. Laue, E. C. Hamley and J. B. Laing, the present managing-director. Much of the success earned by the bank throughout its long life is in no small measure due to its wise and judicious management. During the decade ending 1871, the average dividends were 10½ per cent. per annum; from 1872 to 1881 they were 10.6, and during that decade, to wit. in the year 1872, a dividend of as high as 14 per cent. was declared: from 1882 to 1891 the average was 9.2 per cent.; in 1892 it was 9, falling to 8 in the following year and to 6 in 1894. The next year the directors did not feel justified in recommending the declaration of a higher dividend than 3 per cent., the institution having lost a goodly sum through its advances to Pns. Springhall and Cloabrook. No dividend was declared after 1895 until February, 1902, when one was—at the rate of 2 per cent. for the year.

Unfortunately in 1895-96, one of the bank's customers, one of the best of them, by the way, was allowed considerably to overdraw his account. This, coupled with the fact that the colonial sugar industry from which all local commercial institutions derive much of their sustenance was in a bad way, had the effect of putting the bank in shallow water. The situation was gloomy enough. Unsuccessful efforts were made to get aid from England, when the local Government came to the rescue by pledging their credit on behalf of the bank. Through this it became necessary for the Government to manage the concern under a new Ordinance for a few years until such time as no further assistance should be required. The crisis was not of long duration, the recovery of the bank being rapid, and at the present moment the institution is in a good and sound position, and continues to fulfil the objects for which it was founded.

The usefulness of the institution has been increased by the opening of a savings bank branch a few years ago. The British Guiana Bank has a subscribed capital of £291,666 13 4 and a paid-up capital of £193,025. Its note circulation amounts to a sum between £55,000 and £70,000. By the Ordinance (11 of 1900) which governs the operations of the bank it has to give securities for its note issue "equal to not less than one fourth of the maximum amount of its notes for the time being in circulation if such amount does not exceed \$500,000, and if such amount exceed \$500,000, equal to one-fourth of \$500,000, and in addition one-half of the sum by which such amount exceeds \$500,000." Agreeably with this stipulation, the Crown Agents for the Colonies now hold £18,500 worth of securities for and on account of the note issue of the British Guiana Bank. The Reserve or Surplus Fund is now some 25 per cent. of the paid-up capital, and dividends with bonus at the rate of five cent. per annum are now being regularly declared.

The agents of the bank are:—London, Union of London and Smiths Bank, Ltd.; New York, Maitland Coppel & Co.; British North America, the Royal Bank of Canada; Jamaica, Trinidad and Barbados, the Royal Bank of Canada. The bank is also represented in the other West Indian islands. The books of the Corporation, the necessary extracts from which are sent forward for the purpose, are specially examined by Mr. Douro Hoare and Mr. C. W. Middleton Kemp in order that they should advise with respect to advances and the value of certain securities.

The present currency of the colony consists of British token coins, silver (which is legal tender upon a gold standard), and bronze, and notes of the British Guiana and Colonial Banks. For practical purposes British Guiana stands in the same currency footing as the bulk of the West India islands, and consists in practice of sterling tokens only. Accounts, however, are kept in dollars and cents which are the money of account by law established.

AN INTERESTING LETTER.

When the bank was about to be incorporated, its founder Sir James Carmichael Smyth, addressed the following letter, of historical as well as general interest to the promoters:—

GENTLEMEN,—I congratulate you upon the passing of an Ordinance from which, in my opinion, the most beneficial effects may be expected to be experienced by the landed proprietor, the merchant, the mechanic, and the labourer: in short, by all classes of the community.

(2.) Burke, in his celebrated speech, urging conciliation with America, says: “When we speak of the commerce of our colonies fiction lags after truth, invention is unfruitful; and imagination cold and barren.” Few of the politicians of that day possessed the gifted mind of Burke. The words as quoted are considered by the multitude as the rhetorical flowers of the orator, not as the cool deductions of the statesman, founded upon a careful investigation into the history of our colonies, and their commercial importance. Every succeeding year affords, however, additional proof of the political wisdom and foresight of that great man; and of the truth of his assertions and predictions.

(3.) The assertion made by Burke with respect to the commerce with our colonies in general, may, with the greatest propriety, be applied to the colony of British Guiana in particular. This colony as yet almost in its infancy, already imports and consumes British manufactures, annually to the amount of one and a half million of pounds sterling. Under the blessing of the Almighty Disposer of events an immense impetus has lately been given to the prosperity of this colony. The abolition of slavery has given the death blow to that system of dependence and control which, emanating from the mortgagee in Europe, pervaded all ranks; and was sensibly felt by all, from the nominal proprietor of an estate to the humblest slave employed in its cultivation. A great change has already taken place in the settlements of the inhabitants of this colony. The proprietor of an estate (owing to payment of the Compensation money) being now either perfectly free or nearly so from all former engagements with the mortgagee is a happy and independent man. A kinder and a better feeling between the employer and the labourer, is everywhere visibly and rapidly gaining ground. The labourer, receiving wages for extra labour, now feels the advantage of being diligent and industrious, and the money he acquires being laid out in the acquisition of clothes and other articles for himself and his family, the merchant imports more largely and the commercial and manufacturing interests of the Empire are benefited accordingly. It is impossible to contemplate the improved and improving state of this colony without the greatest satisfaction.

(4.) Released as the great body of the proprietors are from the pressure of heavy mortgages, yet it is evident that to acquire a competency the greater number of them must still spend many years in this colony in the superintendence of their affairs. Gentlemen, so situated, will doubtless prefer employing the surplus of their incomes in profitable speculation in this colony, to the remitting of the amount to Europe where capital obtains so small a rate of interest. The disposable money of the planter will be, hereafter, profitably employed in the construction of railroads and in the introduction of steam vessels and other improvements to the great advantage of all interests connected

with British Guiana. Hence has arisen, in my opinion, the policy and propriety of forming a Local Bank, an establishment through the agency of which those who have money to advance and those who wish to undertake the construction of those improvements to which I have alluded, or others of a similar nature, may be equally accommodated.

(5.) The foregoing are my views upon the subject: and, under the influence of which I have been friendly from the first to the establishment of a Guiana Bank. The more I reflect upon the subject the more I am convinced that the advantage which this community cannot fail to derive from a local bank, under judicious management and arrangement, will be incalculable.

(6.) A wish to promote the welfare of the colony and to advance the interests of the inhabitants generally has been the principle by which I have been solely actuated in putting down my name as a subscriber to the British Guiana Bank.

Court of Policy,

11th November, 1836.

AN OLD BOOK UPON BARBADOS.

By J. GRAHAM CRUICKSHANK.

Old books are not read much now-a-days, and I know several people, quite estimable otherwise, who would soon handle a scorpion as touch a book whose pages are dusty and time-worn. Nevertheless, it is the heart of a book that counts, and I have found wit and wisdom and sunshine at the heart of many an old book in rags and tatters. "Old wine to drink," says a Spanish author, "old friends to trust, old wood to burn, old books to read."

By far the best books on the West Indies are the old ones. I have been surprised more than once—until now I have got past surprise,—to find how many excellent books were written about the West Indies in the old time. They were mainly books of travels, and books on natural history. All of them have long ago gone out of print, and no publisher has thought it worth his while to bring out any of them again in a new edition. Nowadays such books are to be got only by a prompt attention to the catalogues of the second-hand booksellers. There you will note them under "America" or "West Indies," sometimes with the terrible postscript "worn" or "pages frayed" or even "worm-eaten," which is quite enough to make the ordinary reader jib immediately. But the book-lover or historical student is not to be put off so easily, and he will post an order for that book by return mail, hoping he may not be told in reply, "Sold." Only in this way may you gather as the years go, a good West Indian library. Only thus you may ever expect to collect on your shelves a few of the old books to paint for you glowing little pictures of the brave days in the Caribbean.

I have an old book of a disreputable appearance. I do not mind that because I know the book, but I can quite imagine that it would receive short shrift at the hands of a stranger. It is without covers, and the pages are so brittle that I question whether the binder's thread would hold them together. I am not minded to try the experiment. As a matter of fact it should not be in such bad order, because the few other copies I have seen—one other in British Guiana—are in fair order. But this copy, because of the tattered nature of its wardrobe, went cheap, and when one wants three old West Indian books and has the money for two, this point is of some importance as you will observe.

The full title of the book is :—

A True & Exact
History
of the Island of
BARBADOS.

Illustrated with a Map of the Island, as
also the Principall Trees and Plants there, set forth
in their due Proportions and Shapes, drawne out by
their severall and respective Scales.

Together with the Ingenio that makes the Sugar, with
the Plots of the severall Houses, Roomes, and other places that
are used in the whole processe of Sugar-making, viz., the Curing
house, Still-house, and Furnaces ;
All cut in Copper.

By Richard Ligon Gent.

LONDON,

Printed for Humphrey Mosely, at the Prince's Armes
in St. Paul's Church-yard : 1657.

Material for a True and Exact View of early Barbados is not abundant. A short chapter on the Island may be found in Captain John Smith's "True Travels, Adventures and Observations" (London: 1630). Two manuscripts have been unearthed which throw some light on the infant plantation, namely, Major John Scott's Description, (Sloane 3,662, British Guiana,) and the "Voyage of Sir Henry Colt, Kt.," preserved in the University Library, Cambridge. These manuscripts, unearthed and copied by a West Indian bibliophile, were printed in the Demerara "Argosy," but now they are buried again in the back files of that newspaper; they are not available in pamphlet form. "Cavaliers and Roundheads of Barbados" (Georgetown: 1887), which is a mine of information about the infant plantations in the West Indies, gives us two valuable letters written from Barbados in 1627, and two further letters dated 1647 and 1648. When we enumerate these documents we about clear the field.

This dearth of books and of manuscripts is rather astonishing, because a number of literate people went to Barbados shortly after its settlement, and they must have written about Barbados to their friends in Old England or in Virginia. Possibly some more documents may be unearthed as the search for buried history goes on.

However, while "canty for more," we must be thankful for what we have, and the True and Exact History of Richard Ligon is a book of value.

Who was Richard Ligon? We know hardly anything of him but what he tells of himself. He was a Royalist who had been badly hit by the Great Civil War,—“that Barbarous Riot,” as he calls it. Two years after Naseby, he resolves, rather than abide in England where he was now a stranger, many of his friends being dead or scattered, “to lay hold on the first opportunity that might convoy me to any other part of the World, how far distant soever.” He was then above sixty years of age. On June 16, 1647, he embarks aboard the “Achilles,” a ship of 350 tons. He travelled under the wing of Thomas Modiford, who afterwards became Governor of Jamaica. After touching at St. Jago, one of the Cape Verde islands, the “Achilles” arrived at Barbados in September, 1647. Modiford had intended to plant in Antigua, but was persuaded to buy the moiety of a plantation in Barbados and to remain there. The traveller may yet pass in the pleasant parish of St. John the plantation Modiford bought from Hilliard. It was known as “Bushlands then; it is now “Kendall’s.”

The “Exact History” is largely autobiographical, and from it one may fairly gather how Ligon passed his time. His main employment was to assist Modiford in the “Businesses of plantations.” But he turned his hand to other work. He was an architect, and he designed for the Island one or two of its most notable Great Houses, including that on Indian River plantation, or Fontabelle. He was a Surveyor, and he cut bush-paths through the woods. He was something of a Cook, and relates how occasionally riding down to the Bridge, and supping at the taverns of Mistress Joan Fuller and Master Jobson, he imparted to those worthies hints whereby their cooking of fish was improved. Certainly the Barbadians to this day know how to prepare fish tastily. As a philosopher and a humorist, intensely interested in the world however dark the world might be, as a raconteur, and as a master on the theorbo, Ligon was made welcome by all the planters, whether Roundhead or Cavalier. He dined with Colonel Humphrey Walrond (the Cavalier) at Indian River plantation, near the sea: he dined with Colonel James Drax (the Roundhead) at Drax Hall, in the woods. Of both dinners—the one the natural basis of which was fish, the other the natural basis of which meat—he has left us a True & Exact, affectionately detailed, menu.

As regards the main industry of the Island, the bone and sinew of plantation, sugar-making, he tells us a good deal. Modiford was mainly interested in sugar as all the bigger planters were beginning to be in those days. Tobacco, cotton, indigo, and fustick wood were taking a back seat. The Royalist finds room, however, to say of tobacco—as do some other writers of the period—that the tobacco grown in Barbados was surely the worst on earth.

Ligon had some talk with the African negro who was then rooting himself in Barbados. I wish that some of this talk had been reproduced, verbatim, in the book, because this English of the early Blacks was of quaint interest. His description of one or two of those early “Salt Waters” is very tenderly done. Here is a pleasant picture.

Being employed in the woods cutting Church wayes, the negro Sambo “desired me, that he might be made a Christian ; for he thought to be a Christian was to be endued with all those knowledges he wanted. I promised to do my best endeavour ; and when I came home, spoke to the Master of the Plantation, and told him, that poor Sambo desired much to be a Christian. But his answer was, That the people of that Iland were governed by the Lawes of England, and by those Lawes we could not make a Christian a Slave. I told him, my request was far different from that, for I desired him to make a Slave a Christian. His answer was, That it was true, there was a great difference in that : But, being once a Christian, he could no more account him a Slave, and so lose the hold they had of them as Slaves, by making them Christians ; and by that means should open such a gap as all the Planters in the Iland would curse him. So I was struck mute, and poor Sambo kept out of the Church ; as ingenious, as honest, and as good a natur’d poor soul, as ever wore black, or eat green.

We find a word or two also about the white Bondservant, although not so much as I would like to have found. Whole pages are taken up in describing the Palmetto Royal, and such vegetables, which one may see for himself any day down Black Rock, and in the sour-grass pastures about the Hole. But the white Bondservant has disappeared—he is buried beneath the mould in forgotten places—and a picture of him, in greater detail, would have been valuable. However since anything is better than nothing, we must be thankful for those little vivid touches in Ligon, which do help us to picture the exiled Kerne as he laboured in the field all day and returned at night to his hut of wattle-and-daub.

We have here the Bridge, which was the beginning of Bridgetown.

Upon the most inward part of the bay, stands the Town, which is about the bigness of Hounslo. and is called the Bridge ; for that a long Bridge was made at first over a little nook of the Sea, which was rather a Bog than Sea. A Town ill scituate ; for if they had considered health, as they did conveniency. they would never have set it there : of, if they had any intention at first to have built a Town there, they could not have been so improvident, as not to foresee the main inconveniences that must ensue, by making choice of so unhealthy a place to live in. But, one house being set up, another was erected, and so a third, and a fourth. till at last it came to take the name of a Town ; Divers Store-houses being there built, to stow their goods in, for their convenience, being near the Harbour. But the main oversight was, to build their Town upon so unwholesome a place. For, the ground being somewhat lower within the Land than the Sea-banks are, the spring Tides flow over, and there remains, making a great part of that flat a kind of Bog or Morasse, which vents out so loathsome a savour as cannot but breathe ill blood, and is (no doubt) the occasion of much sickness to those that live there.

At the time of our arrival, and a month or two after, the sickness reign'd so extreanly as the living could hardly bury the dead; and for that this place was near to them, they threw the dead carcasses into the bog, which infected so the water, as divers that drunk of it were absolutely poysoned and died in a few hours after; but others, taking warning by their harms, forbear to taste any more of it.

The ground on either side of the Bay (but chiefly that of the Eastward) is much Firmer, and lies higher; and, I believe, they will in time remove the Town upon that ground, for their habitations, though they suffer the Store-houses to remain where they are, for their convenience. But the other scituation may be made with some charge as convenient as that. and abundantly more healthful.

About the end of 1649 the old Royalist suffered from a grievous illness, and even more so from the "Quacksalvers" who tried to remedy it. He has his revenge upon those gentlemen by hitting them hard in his book. Upon recovery, he thought it as well to depart the Island, once more to "suck in some of the sweet air of England." The air of Barbados at that time—there being divers bogs, and much high wood, breeding fevers and calentures—was not particularly wholesome. Upon the 15th of April, 1650, at midnight,—sailing at that dark hour, he tells us, the better to evade an Irish Pirate (one Plungnet)* who had for many days hovered about the Island—Richard Ligon left the West Indies for ever. He had been there for two years and six months. By daybreak they had lost "the Barbadoes."

We turn now to the genesis of the *Exact History*. It is evident that Dr. Brian Duppa, Bishop of Salisbury, inspired the book. His name deserves to be kept green by all Barbadians. Upon Ligon's return the Bishop was pleased to enquire about Barbados, an island he was "much interested in." But there was little time to tell much when so much was to be told, so the Bishop imposed the task—"very unfit for me to undertake," says Ligon, "being one altogether unlettered"—to deliver in writing "the sum of all I knew, concerning that Iland." The Bishop then read the notes, and advised, for the benefit of those who intended to adventure upon plantation, they be published as a book.

It is just possible that Ligon may have had some idea of a book, while in Barbados. Worthy of the most inveteratè bookmaker was the way he worried and harassed Surveyor Captain Swan, to "rub up his memory, to try and take a little paines in the survey of his Papers, to try what could be found out there, that might give me some light in the extent of the Iland."

Be that as it may, the Bishop's advice settled the matter. The Royalist falls to re-reading his notes, falls like Surveyor Swan, to "rubbing up his memory."

* Plunkett (*Ed.*)

Then—horrible dictu!—he finds himself in the Upper Bench prison. Months passed, and nothing more was heard of the book. If Ligon was unlettered, as he says he was, but which we, with all due respect for so veracious a gentleman must refuse to believe, it is probable that the delay was not without its advantages; it may be partly responsible for the “self-pleasing quaintness” of many of his pages, breathing the old time deliberation! Some months before, the traveller had been designing “a piece of Landscape, and one of Story, wherein I meant to expresse the postures of the Negres, in their severall kinds of Sports and Labours; and with it, the beauties of the Vegetables that do adorn that place.” But now, being cast into Prison, he was deprived “both of light and loneliness, two main helpers in that Art.” So the idea had to be abandoned.

But he was not to be baulked of his book nevertheless. Writing from Prison on July 12, 1653, this earlier John Bunyan, but of a somewhat dissimilar type, addresses an “Epistle Dedicatory” to the Bishop of Salisbury. He has put his pages together, he says, and here they are. The question is, shall he yet publish? On September 5, the Bishop replies in an affectionate letter, printed after the Dedication. “And for the question you put to me, whether you should publish it or not, I desire you would make no doubt of it.” By your aid, he adds, “I have in a few daies gone the same voyage, view’d the Iland, weigh’d all the Commodities and Incommodities of it, and all this with so much pleasure that I cannot forbear telling you that though I have read formerly many Relations of other parts of the World, I never yet met with so exact a piece, as this of yours.”

Four years again elapse. Then in 1657, the True & Exact History of the Island of Barbados is published in St. Paul’s Churchyard.

In 1673 a second edition appeared: Printed and sold by Peter Parker, at His Shop at the Leg and Star over against the Royal Exchange, and Thomas Guy at the corner Shop of Little Lumbard-street and Cornhill. Beyond the correction of printers’ errors, the second edition differs not at all from the first. In 1674, the History was published in Paris,—“*Histoire de l’Isle des Barbados*”—along with other African and American Voyages.

Ligon’s book must have been read by many with great interest. It was the first book published about Barbados. And Barbados, by the middle of the seventeenth century, was a place of some note, not to say notoriety. Already it had defied the Parliament Fleet, and had been granted its own Charter. For Royalists it was a Cave of Adullam, and a jumping-off ground for Virginia, Jamaica and Antigua. Beating their swords into ploughshares, broken soldiers from Marston Moor here turned from the Field of Battle into the Tobacco Field. And lastly was it not of this Island of which it had been said, “the prisoners in the Tower would be Barbadoz’d”?

Evelyn mentions in his Diary that he had perused Ligon. Richard Steele, too,—whose first wife was a Barbadian—read him too, and in the "Spectator" for March 13, 1710–11 (No. 11) borrows from Ligon, with some inimitable touches of his own, the sad tale of the Indian maid, Yarico. The wailful fate of Yarico has been told in several languages, according to the Abbe Raynal.* In the English language, the best known work after Steele's Essay is the younger Colman's play of "Inkle and Yarico," in which appeared the well-known lines :—

Now let us dance and sing
While all Barbadoe's bells do ring.

As for later writers on the West Indies, not one of them neglects his Ligon from Sloane onwards.

One asks,—and it is a worthy motive because in historical matters one dare not trust one's own grandfather—how far is Ligon's account of Barbados reliable? A pleasant humour which plays about his pages has raised a doubt as to his trustworthiness in the mind of Dry-as-Dust, who associates a pleasant style with flippancy, and accurate learning with insufferable dulness. Dry-as-Dust may be quite easy in his mind; Ligon may be read with profit as well as pleasure.

No man in his day knew more, about the early records of his native land than Mr. Nathan Lucas of Farley Hill, Barbados, Mr. Lucas was a grandfather of Charles Kingsley, and in Kingsley there sprung to deeper life, the interest in matters of history notable in his grandfather. Mr. Lucas was a Judge of the Precinct of St. Michael when he retired on pension. Unless he has a hobby, your old pensioner is the most desolate of men. But the Judge had a hobby, and this he rode during the remaining years of his life, to his country's benefit. Did you want the Judge in those latter years, you might find him among the dusty and water-stained, burnt and worm-eaten books and papers which littered the rubbish-rooms of the old Colonial Secretary's Office. Nowadays the historical student will find that four or five of the original volumes of the early Council Minutes have disappeared. By taking thought however, he may get Judge Lucas's copies of those volumes, which are almost as good, and in one sense better because they are indexed. Here and there, in his own volumes, the Judge adds a footnote which occasionally runs to a page or two, and in two or three instances broadens out into a Miscellaneous volume, embodying some tradition current in his day, or something that one of the "oldest inhabitants" had told him, in amplification of the official minute. It is here we touch Ligon, whose statements the Antiquary had frequent opportunity of checking.

On page 22 of his book, Ligon mentions the acreage, crop by crop, together with other particulars of Modiford's plantation, Judge Lucas notes :—"Ligon's particulars I know to be true, from the original

*"Yarico's Pond" was formerly a feature of Kendall's plantation in Barbados. I visited "Kendall's" in 1906 but found that a cow-pen had been built over "Yarico's Pond."

Hilliard-Modiford agreement, to which Ligon is a witness, recorded in the Secretary's Office." Alas! this agreement has since disappeared. I searched for it seven years ago, as a matter of personal curiosity, but it was not to be found. It may have been among those other Records which a former Colonial Secretary, who would be surprised if we called him a Vandal, as we do, put into twelve bags, and sunk in the bay. In another place Judge Lucas says:—"To me, Oldmixon (In the Barbados section of his 'British Empire in America') often appears arrogant, presumptuous and pert, especially when he quotes the faithful and accurate Ligon. "Oldmixon," adds the Judge, in his best Bench manner, "is always to be credited with caution."

Judge Lucas is my principal witness. There is really no need for any other. But other evidence may be adduced if it is wanted. Take Ligon's description of sugar-making, for example. His Boyling-House and Curing-House (allowing for a few improvements which have been made during two hundred and fifty years) may be seen any day of the week among the Barbados hills. Barrels long ago took the place of the old su_ar-pots, but the term "potting" survives, as signifying to cure the green muscovado. On some of those hill estates, too, one may yet see, as Ligon saw, the canes "bound up in faggots," and brought home, Devon-fashion, "upon the backs of Assinegoes."

We have heard Ligon on the bog at the Bridge. Some years ago, when they were digging the foundations of the Public Buildings, some of the earth was taken away and thrown in the garden of Government House. Air and sunlight awakened the dead soil, and after a month or two there was observed to be springing from this earth the green shoots of the bog mangrove.

Take again Ligon's description of the Indians, a few of whom,—the remnant of a batch from Esseequebo,—he found in Barbados. He gives a pleasant picture of the gentle Arawak. It tallies with our knowledge of the Arawak as we know him to-day in Guiana.

Again, Ligon's "Mapp." A lively presentation of the life of the Island it is. Here is what looks like a Highlander, in kilts and all, driving an Assinego. And here, at the north end of the Island, about that level champaigne, locally known as "Champion Ground," is a man on horseback shooting at a negro who is running away. That is a touch of imagination, you might think. But it is not. Look through the early records, and note in support of the faithful Ligon, a day that was "set apart for a general hunting of the runaway negroes." And for the place where the runaways were, it was just at the north end of the Island, where they lurked—they and those rebels, the Irish—in cave and wood and gully.

Finally, as indicating Ligon's extreme regard for accuracy, we may note that he leaves the year of the settlement of Barbados blank. A later authority has filled it in as 1627.

THE HINDUS IN THE WEST INDIES.

By ARCHDEACON JOSA.

In the December Journal some notes appeared on the *Religion* of the Hindus and on the *Caste* System. We propose in the present number of "Timehri" to give further notes on *Woman* as she is treated in India and here, and on some *Marriage* customs that prevail in India as well as amongst our own East Indians.

"WOMAN."

"What are little girls made of—
Sugar and spice and all that's nice,
And that's what little girls are made of."

If the Indian ayas, or nurses, indulge in nursery rhymes, we wonder whether they would not rather say that little girls are made of "snaps and snails, and puppy dogs' tails." Woman holds no place of honour in Hinduism. And although there are many goddesses yet these goddesses have nothing in common with woman—as we understand that term. These goddesses are worshipped because they are dreaded. The goddess Kali, the most popular of all goddesses, haunts cemeteries, her garlands are serpents, her necklaces human skulls! She is the destructive deity. Her hands are dyed with gore, and one of her four hands is represented as holding a naked sword, ready for vengeance.

But let us trace woman from her infancy, as she is in India and here. We have read somewhere that as soon as a baby girl is born into the world, the *accoucheuse* looks into the face of the father, and if a certain sign is made, the *accoucheuse* places her hand on a well-known spot on the head and the child ceases to live. It is terrible to think on such things. In Demerara it should be stated no such thing is ever practised amongst our coolies, as a child of either sex seems welcome.

A female child, as a first-born, is a source of mourning to a family! The Hindu believes that no one can perform his funeral rites but his son; and so he dreads that his soul will not rest in peace, if there be no male to perform them. Then again for a female child a dowry is to be provided—in fact she is a continuous source of trouble.

The poor girl leads a life of entire subordination. She is ignorant, and kept so purposely. A learned Pandit once said words to this effect, that it was impossible for their women to be taught to read, unless Indian literature is entirely changed. It is too immoral for them to read! When the time of marriage arrives the girl is asked no questions. She marries the one chosen by her parents. The following free translations from Hindu sacred books will show, how that such a thing as "Woman's rights" are unknown in India. It is said "woman whether she be a

child, a girl, or an old woman, she cannot do anything in the house as a free agent. In her childhood she is under the authority of her father, in her youth under that of her husband, and after the death of her husband she is in subjection to her children!" "She can never be free."

The following passage hits at men somewhat hard, yet our ladies would not quite like to follow the commands of this Shastra :—

"A woman should never look on a man's beauty or youth, it should not matter to her whether he is handsome or ugly, let her adore his manhood only; man is by nature busy, inconstant, and hard-hearted, therefore it is her duty to keep an eye on him!"

A woman is not allowed to sit together with her father, brother, or husband, nor to eat with them. We have frequently noticed in this country the males eating out of a saucepan, and when they were satisfied, to throw down the saucepan for a woman, and in many instances, with not as much grace as we give food to our dogs! Woman is a mere chattel. Our readers must frequently have noticed that when the coolies take their wives for a walk, they invariably walk in front and the women follow, generally at a distance of some two or three yards.

It would also appear that there is no necessity for a woman to have any religion, and if we read Manu's rightly, he says :—

"For women there is no need of a special religion, abstinence, or religious fasting, for by their revering their husbands, they are considered great in the Kingdom of Heaven."

We hope our lady friends will not mind our next quotation. We will endeavour to translate it into as mild English as we can—

"It is a natural fault of a woman to utter what is not true, to do things without consideration, to make use of stratagem, to say hard words, as well as to be impure and cruel. It is also their nature to blame their husbands, therefore let wise men beware of women!"

There was a time—we are happy to be able to use the past tense,—there was a time, when woman was considered very useful and all that was good. This was at the time of Suttee—or the practice of burning women alive after the death of their husbands. Professor Max Muller has proved that there is no passage in the Vedas sanctioning the burning of women. It was an "innovation and a heresy; but it was an innovation of 2,000 years standing, and a heresy abetted by the priesthood since the days of Alexander." Women are expressly forbidden even to follow their husbands to the graves, as the following passage proves :—

"With the verse 'Rise woman' the wife ascends to follow her dead husband; the younger brother of the departed repeating the verse, prevents her. The Hotri priest performs that act, if there is no brother-in-law, but to follow the dead husband is forbidden, so says the law of the Brahmans."

It was a bold yet a noble step on the part of the British Government to prohibit "widow burning" and though the condition of woman is still a forlorn one, yet matters are improving. In the after literature of India, woman is made to perform great wonders through the burning of her body. "By it she saves her husband from hell fire." By sacrificing herself "she is able to save her husband and all her relatives! Even if a woman's husband is a murderer "suttee" obliterates all his sins!" But if woman is considered to be "sin personified" when alive, what extraordinary things she is able to do by her death! "As the eagle snatches a serpent from his hole, so a woman by performing 'suttee' delivers her husband from hell and rejoices together with him in heaven." (11.)

A local writer (2) states that woman "has no choice in any matter throughout life." To prove that abject obedience is required of women, we will quote the following: "A woman is not allowed to go out of the house without the consent of her husband, nor to laugh without a veil over her face, nor to stand at the door, nor look out at the window. She was made for servitude to her husband, she has no fitness for his equal companionship." (2.)

We have frequently asked women to give us the names of their husbands, and invariably they have refused so to do. The reason of this seems to be that a slave has no business to pollute the very sound of her lord and master's name. We have also been told that if a woman dare mention her husband's name, "something" will of a surety happen to him.

The women of India are celebrated for their modesty, and we have frequently noticed the women here to cover their heads as soon as they have noticed a man pass by. We believe we are correct in stating that the women in India are as moral as the women of Ireland. Such a thing as a woman leaving her husband is unknown. Here in Demerara quite the reverse prevails. Is it any wonder then that the Hindu who, according to his own religion, is so far superior to the woman, when he finds that his wife has proved unfaithful, takes his "cutlass" and makes mincemeat of such a thing? He considers woman a mere chattel. We feel for the man. We could almost wish that capital punishment were abolished for such as he—until he learns to understand that woman is his equal—his help-mate—his "wife."

Here in Demerara, the condition of the woman is greatly enhanced. She earns her own living. The manager pays her wages into her hands and she altogether feels that she is a rational being. We have known some Indian women keep their husbands in proper subjection as their sisters do, or try to, in the West. Just imagine a woman daring to "summons" her lord and master in India! Here on the other hand it is frequently done and we see "Saniehari" suing "Mangal" for money lent.

Immigration to this and other countries has greatly improved the conditions of the East Indian woman and as women are so scarce in this colony they feel their power. They are also sure that they can exchange

one lord and master for another with the greatest ease. It is shortsightedness on the part of our Government not to import more women. There is a great deal of crime and murder here. Import more women and the evil will disappear. Why not import the child-widow of India ?

MARRIAGE.

It has already been stated that it is the *duty* of every man who profess the Hindu Religion to be married ; it is equally an object of reproach for any woman to remain unmarried. A party of old maids to escape from this reproachful condition, have been known to unite themselves in marriage with old men as their friends were carrying them to die on the banks of the Ganges ! It is therefore an anxious thought of every parent to marry his offspring, and this is the reason which causes the betrothal at an early age—frequently during infancy. Such betrothals are considered binding on the part of the young people. It is binding on the part of the parents to procure husbands for their daughters who very frequently are married to men three or four times older than themselves.

In British Guiana also marriages are contracted very early. It is said in their books “ The giver (the father) of a *Gauri* (a girl eight years of age) obtains the heaven of the celestial dieties ; the giver of a *Rohini* (of nine years) the heaven of Vishnu ; the giver of a *Kanya* (of ten years) the heaven of Brahma ; and the giver of a *Rajaswali* (above ten years of age) * * * sinks into hell” ! ! (3) This passage explains fully why the people are married so early and then one ought to bear in mind that Indian girls arrive at the age of puberty at an earlier age than their European sisters. An English girl, for instance, at twenty-five or thirty is in her prime—whilst an Indian woman of that same age is wrinkled, emaciated and looks an old woman.

The laws of Manu enumerate eight kinds of marriage, but as some of these are prohibited and two only are practically in use, we will not make mention of the other six. The two in use are the *Gandharva* and the *Rakshasa* rites. The former is a simple mutual consent from the affection without any mutual rite, made in the presence of the parents and relations ; the latter is the marrying of a girl forcibly, just as if she were a prize carried off in war. “ Though polygamy is permitted by every Hindu Code and in every age to all classes, yet the practice of it among the Hindus is not general ; in fact it seldom happens even among the wealthy. When more wives were taken during the lifetime of the first, she is always considered as the mistress of the family ; all religious ceremonies are conducted by her and under her exclusive management. The other wives who are denominated secondary, or auxiliary wives, are considered as her younger sisters, from whom, as to their senior and superior, all deference and respect, and even service, if required is due.

The marriage festivities last for several days. The marriage processions have often been described as gaudy in the extreme. No

“respectable” marriage can be celebrated at a smaller cost than \$2,500 and it has been known to exceed \$60,000. The savings of years are thus dissipated in a few days of extravagance, and families which were in comfortable circumstances are plunged into poverty and debt by the marriage of one of their members.

The expenditure consists not in eating or drinking or the giving of presents to the bride. The Hindus are very abstemious, and it is not the eating and drinking that runs away with the money, but the giving of presents of garments and moneys to the guests, feeing the Brahmans, processions, and fireworks.

As the Hindu are very superstitious, and believe in the science of astrology, they never “fix the day” until the *Jyotishi* or family astrologer, has fixed the auspicious day and hour. The bride is given away by her father or his representative at her own home.

The ceremony begins by worshipping Ganesha, who should be invoked at the beginning of every action, for it is the province of this deity to ward off the obstacles by which all undertakings are liable to be thwarted by the malice of evil spirits. In the case of the marriage of Brahmans, the most important parts of the ceremony are—

(a) The saptapadi (4) the leading of the bride around the sacred fire each time in seven steps.

(b) The offering of the burnt oblation (*homa*) by the bridegroom.

(c) The binding together of the bride and bridegroom by a cord passed around their necks.

(d) The tying together of their dresses. (5.)

In this colony we have noticed that in addition to some of the ceremonies abovementioned—both the coolie bride and bridegroom put on a gold or silver necklace called *hasli*, and if the people are too poor they borrow it.

After the ceremony is ended the bride is taken to the bridegroom's father's house and the husband puts her under the care of his mother. The mother-in-law considers her son's spouse as little better than a slave. Hence very often the Hindu spouse flies back to her parents, and the misery of a married life begins.

Not only is the Hindu bride placed under the care of her good mother-in-law; but also in an apartment set apart for ladies. These apartments are called Zenanas. They are usually the most dreary places, never visited by men. In Europe, and here, if we cannot give the ladies better rooms than those occupied by the men, at any rate they possess the best possible apartments. It is not so in India. The man have the best rooms and the best furniture, the women the worst rooms and no furniture at all. As the bride has no accomplishments, she cannot play, paint or read, so her life is a wearisome one. A great deal of her time is

spent in amusing herself in putting on her ornaments and adorning herself. The poor women have their household duties to perform, their curries and sweetmeats to make to please their husbands. They have a good deal of time on their hands which is spent in sauntering and talking for ever, talking—possibly scandal.

The same costumes that were in vogue 200 years ago are in vogue now. There are no fashion plates to consult; no milliners' heavy bills to be dreaded. And we believe that ladies in India do not continually run to their husbands to complain that they "have nothing to put on."

But surely the very fact that a woman was the Sovereign Empress of India, must do a great deal to better woman's position. The Queen-Empress Victoria, is already worshipped in India as a deity; let us hope that the people will soon desist in this but learn from Victoria's life what is the true position of woman, of a wife

The marriage customs of this colony are in several points like those of India. We have noticed one difference particularly. The bride does not bring a dowry, but her husband frequently has to make handsome presents to her parents to obtain their consent and several parents hope to live on their son-in-law. This is owing to the scarcity of women.

The marriages in this colony are performed by Brahmans according to the Hindu law but the coolies themselves prefer to be married by a Christian minister, not because they believe the marriage to be more binding in a religious point of view, but because they hope that by being so married their wives may not be enticed away. They desire to be married "English fashion." The question arises are the marriages performed by the Christian ministers valid, in point of law, in the case of immigrants who are heathen? We unhesitatingly reply in the negative. In the first place, the heathens are made to go through a service in the name of the Most Holy Trinity, in whom they do not believe. Secondly, Ordinance No. 10 of 1860 was passed "for the due celebration and registration of the marriage of heathen immigrants" no minister of any denomination, therefore has any business to marry heathen immigrants on the face of this Ordinance.

According to the English law it is necessary "in order to constitute a valid marriage that the parties must be able to contract, willing to contract, and must actually contract in the proper forms and solemnities required by law to be observed." For Christians the Order in Council of September 7th, 1838, is still in force. We maintain that, apart from the mockery of performing a service which is to make the contracting parties act a lie, these marriages are not valid. Possibly at some future date some important case may be brought forward which will shew that we are right in the interpretation of the law.

(a) There are now several centres throughout the colony which enable our heathen coolies to marry before a magistrate or other civil authority after giving proper notice.

(b) "The Indian immigrant must be made to feel and know that all marriages contracted in the colony are as binding as those performed in his own country. The present law is not considered in this light by them, but looked upon as a matter of convenience, to be thrown aside whenever it becomes irksome." This might be done by having some ceremony which would impress our coolies. Marriages performed at the Immigration Department lack a ceremony and show.

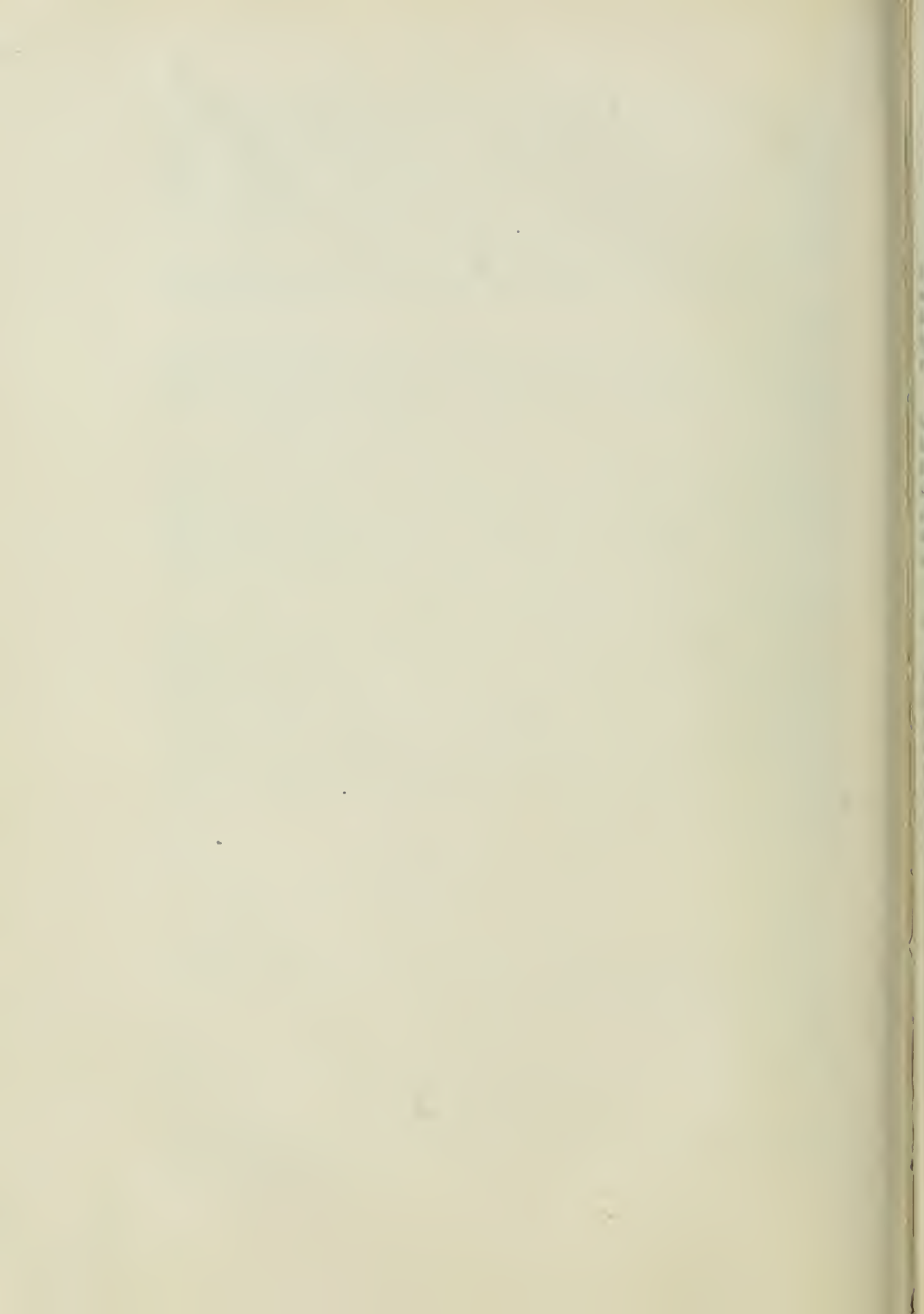
(c) Considering the frequent wife-murders that occur in the colony, some stringent laws should be enacted to prevent the enticing away of women.

(d) But the very best means of improving our coolies in this respect would be by importing a few ship-loads of women, and also endeavour to persuade our coolies to inter-marry with creoles, and *vice versa*. We know of several of these marriages that have proven very happy.

There is one more point and we conclude. Many coolies for the sake of being married have consented to be baptised. There is a vast difference between christening and Christainizing. Such baptisms will bring the Christian Religion into discredit. We also believe that the coolies are greatly demoralized by this lowering of the standard of Christianity. We cannot help asking the question "Would Christian Ministers perform such marriage ceremonies if there were no fees?"

The Clergy, some of them, do not seem to know that there is a law which forbids even publication of banns under the penalty of £10 without first obtaining permission from the Immigration Department to publish the banns—for it frequently happens that the contracting parties have already another partner, duly registered at the Depôt. This permit of the Immigration Agent General however only safeguards the officiating minister from incurring the penalty but in most cases when the contracting parties were born in India, it is fairly safe to conclude that they were already married in India.

- (1) Max Muller's "Chips." Vol. 11, 34, 38, 10.
 - (2) Bronkhurst "The Origin of the Guyanian Indians" page 23.
 - (3) Do. Do. Do. page 23.
 - (4) *Saptapadi*, c.f the Latin *septem* and *pes pedis* = seven steps.
 - (5) Monier Williams's "Hinduism," p. 63.
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THE PLANTERS' INSECT FRIENDS.

By HAROLD W. B. MOORE.

Every part of the sugar-cane is liable to attack by insects. The blades are sapped by scale-insects, and also eaten by grasshoppers and caterpillars. The stem is sapped by other scale insects, and bored and tunnelled by another set of caterpillars, by beetles and beetle larvæ, and by wood-ants. Lastly, the underground parts are assaulted by wood-ants, scale-insects, and a third lot of caterpillars.

Were these various pests allowed to have their own way the cultivation of the sugar-cane in British Guiana would be an absolute impossibility. They are not, however, permitted to damage, kill, and destroy the canes without let or hindrance, for they are greatly hampered, and in some cases even completely stopped, in their diabolical work by several agencies, one of the principal of which are certain other insects, and it is of some of these, which constitute the planters' insect friends, I now proceed to give a short account.

Let us begin with insects which attack the blades, and let us note some of their insect enemies.

The moths *Remigia repanda* and *Laphygma frugiperda*, if disturbed from rest, are, while flying, eagerly seized and devoured by the big green dragon-fly or pond-fly *Leptemis vesiculosa*. In his grasp they are powerless. He perches with them on a cane-blade or other eminence, cuts off their head, wings, and other almost juiceless parts, and then gnaws into their thorax, so that death is fairly speedy. It is the caterpillars, not the adult moths, that destroy the blades, but nevertheless by consuming the moths the dragon-fly prevents to some extent the deposition of eggs, which, if not parasitized or otherwise destroyed, would eventually produce harmful caterpillars.

The eggs of *Laphygma frugiperda* are parasitized by a minute yellow hymenopterous insect, apparently the same which is also a parasite of the eggs of the small moth-borers, while those of *Lycophotia infecta*, also a moth, are parasitized by a little black hymenopteron, named *Telenomus atripes* by the late Peter Cameron. I once obtained egg-clusters of this last moth aggregating nearly a thousand eggs, and of these fully 68% had been killed off by this parasite.

Before going further it may be well to explain for the benefit of the general reader the way in which egg-parasites work. It is as follows:—The full-grown parasites, which are always microscopic, sometimes only about the size of the ordinary full-stop used in punctuation, seek out eggs which butterflies, moths, or other insects have freshly laid. On finding such eggs they deposit their own eggs inside of these by piercing the egg-

shells with a special organ known as the ovipositor. The eggs of the parasites rapidly hatch into tiny grubs that eat up the egg-yolk in which they find themselves immersed, and thus prevent the hatching of hurtful caterpillars or larvæ. The grubs, of which sometimes half-a-dozen or more may obtain enough sustenance in a single egg, then change into pupæ, and finally into adult parasites, which then emerge into the outer world by breaking a hole in the lepidopterous or other egg-shell which imprisons them, and fly off to parasitize other eggs in turn.

Not only are the eggs of *Laphygma frugiperda* parasitized, but the caterpillars for these are attacked by an ichneumon named *Enicospilus guyanensis* by Cameron. In its larval stage it feeds inside the caterpillars, one to each caterpillar, and emerges as an adult from a tough brown cell which is more rounded and more tapering at the posterior than at the anterior end. It is one of our commonest ichneumons, and is sure to put in an appearance in cane-fields whenever its host is in season.

It may be mentioned here that the caterpillars of *Laphygma frugiperda* are cannibalistic, preying not only on one another but on caterpillars and pupæ of skipper butterflies. If they happen to enter the retreat of a skipper caterpillar they do not hesitate to attack any caterpillar or pupa hidden therein. They are therefore both enemies and friends of the planters, but on the whole they are more enemies than friends.

Caligo oberon, one of our biggest butterflies, is frequently met with in cane-fields. A check on its undue multiplication occurs in the shape of a Chalcid parasite, which emerges from the pupa of the butterfly. A pupa which has suffered parasitism is readily recognisable by the holes gnawed in it by the parasites at the time of their emergence.

The caterpillars of about a dozen skipper butterflies (*Hesperiidæ*) may be found in our cane-fields. They form retreats by folding the blades edge to edge, or by making one or more incisions from the edge towards the midrib, and then folding over the portion next the one incision or between the two incisions. These retreats although indicating to parasites the position of their host must be regarded as protective on the whole. Hymenopterous parasites of skippers include a Joppa, a Zelemorpha, and *Chalcis annulata*. The first and third emerge from pupæ of the butterflies, the second from caterpillars.

The Joppa larva hollows the skipper pupa to a mere shell, and itself transforms therein to a pupa, which is fairly discernible on account of the semi-transparency of the pupa shell of its host. In due time the head part of the skipper pupa is broken away and out comes the lively parasite. But a single Joppa occurs in a pupa.

Several individuals, however, of *Chalcis annulata*, a very common insect, occur in a pupa, and on emerging leave ugly looking holes to tell how the pupa met its death. Attacked pupæ turn dusky yellow brown with the skin glassy and transparent.

A caterpillar attacked by a *Zelemorpha* becomes quiescent, fixes itself to the blade, dies, and then turns dark brown. The parasite pupates within the caterpillar, and at the time of emergence gnaws a hole in the back of the ninth and tenth segment.

The caterpillars of certain Pyralid moths, species of *Syngamia*, are badly parasitized by a Tachinid fly. There is also a brisk demand for them by a wasp, a mud-dauber named *Odynerus clavilunatus* by Cameron, which requires them to place in its cells to serve as food for its larvæ. It is most interesting to watch this wasp deliberately searching the cane-blades for the caterpillars. Its actions show it to be as much aware as the human entomologist that attention need be directed only to folded blades.

If we be in a thoughtful mood the spectacle reminds us that hymenoptera used to sally forth on entomological expeditions at a period in the earth's history antedating the appearance of man, and we cannot but feel humbled by the fact that we are to a great extent mere copyists of what—wasps! Here we are in a field on the look out for folded cane-blades to see if the folds contain caterpillars, and there along with us is an *Odynerus* doing exactly the same thing, which it knew of before we did, and getting through its hunting more expeditiously and, perhaps, more successfully too, than we are getting through ours.

The eggs of a leaf-hopper, one of the *Fulgoridæ*, a sucking insect of the plant-bug group, may often be seen in canefields. They are deposited in the blade itself, just beneath the upper surface, in clusters of about a dozen. They are laid side by side in a row. On a casual glance they may be mistaken for eggs of the small moth-borer as the spot in which they are laid turns yellow white and thus causes a resemblance to the egg-cluster of the moth-borer. They are parasitized by an elongate black hymenopteron, which probably is mainly responsible for keeping the leaf-hopper low down in the category of minor pests.

A scale-insect, apparently a *Pulvinaria*, is now and then observed on cane-blades, its presence being always accompanied by busy throngs of black ants. It never, however, becomes rampant, one reason being the existence of a Chalcid which parasitizes it sometimes to the extent of over 90%.

Various grasshoppers damage the can. -blades. Two of their insect enemies are the Sphegid wasps, *Sphex ichneumoneus* and *Chlorion (Proterospheæ) neotropicus*, which require them as food for their larvæ. The wasps, which first paralyze the grasshoppers by stinging, may now and then be seen with burdens all but too heavy for them to carry.

Coming to the insects which attack the cane stem, the first whose enemies I shall deal with is the mealy-bug, which is a Coccid or scale-insect, and one which is sometimes abundant enough to be a serious pest. It has quite a number of insect enemies, being parasitized by certain

minute hymenoptera, and being fed on by Coccinellid beetles and their larvæ, by the larvæ of lace-wing flies (Chrysopidæ), and probably by the larvæ of a Cecidomyiid fly. None of these friends has as yet been identified.

The larvæ of some of the Coccinellids are thickly covered with white fluff so resembling that of the mealy-bug that it is often a little difficult to detect them among a mass of their prey.

The eggs of the mealy-bug lace-wing fly are yellow or yellow white, borne each on a long slender glassy transparent stalk, by which they are attached to the cane-blades in a group of over a score at times. When first hatched the larvæ are naked but have a few hairs. As soon, however, as they begin to roam about in search of food they commence forming on their back a covering of various materials, such as a mealy-bug fluff, and odd bits of stuff from surfaces over which they wander. Their body hairs assist in supporting the covering. Their jaws are strong, curved, and sharp, admirably suited for piercing their victims, which they sometimes transfix and bear away. They pupate beneath their curious coverings, affixing themselves to cane-blades, dry or green. In about two weeks after pupation the adults emerge. They are handsome delicate creatures, green, with long antennæ and four gauzy wings, and eyes with a golden green iridescence.

The larvæ of a Cecidomyiid is abundant among masses of mealy-bug on the eggs of which they seem to feed. The adult fly is reddish, clothed with dusky brown scales, and has the wings densely hairy.

The most terrible pests of the cane are the small moth-borers *Diatraea saccharalis* and *Diatraea canella*. These are responsible for more damage and loss than all the other pests combined. It is therefore of the greatest interest to find that they have several insect enemies, some of which are of the highest importance.

The most valuable of their enemies are two hymenopterous parasites first discovered in the colony by Mr. J. J. Quelch. At times they parasitize the moth-borer eggs to the extent of 75% and more. One of the parasites is yellow, the other black. The former is the commoner of the two, and whereas the latter occurs singly in each egg of the moth-borer, several of the former may be noticed in a single egg. Egg-clusters parasitized by either soon become of a black colour, which is more complete and opaque in case of the yellow one than in that of the black, because with the latter the *Diatraea* egg-shells show as a more or less transparent ring around the contained black parasites. Mr. Quelch mentions the interesting and important fact that the parasites on emerging immediately copulate. In his "Interim Report on Insect Pests," April, 1911, he says:—"It was curious to note during the emergence of these little forms from the egg in which they had passed their whole development, the method by which fertilisation occurs. The previously freed males kept closely to the egg-cluster, taking note when any female began to break

through, fertilisation taking place at once after emergence after some struggle among the males. The females were thus at once prepared for the deposition of fertile eggs."

I have observed the life-history of the yellow parasite from egg-laying to adult, I was enabled to do so in the following way. On the afternoon of Friday, August 30th gone, I was in a cane-field of an East Coast estate searching for freshly laid egg-clusters of *Diatrœa*. Shortly after securing one and while I had it in my hand on a bit of the blade on which it had been deposited, one of the yellow parasites alighted on it and began to parasitize it. So engrossed was the tiny creature in its task, that it kept to it even though I continued moving along on the hunt for more clusters. Now and then I paused to note under a hand lens the method of parasitization. It began its work at 3 p.m., and about 4.30 p.m., by which time I had travelled back by batteau to the factory yard, it seemed to have finished. During the hour and a half it walked off from the cluster three or four times but returned again each time to resume thrusting its ovipositor into the eggs. It seemed that it desired to make sure it had dealt thoroughly with each of the thirteen eggs composing the cluster.

By Sunday, September 1st, several granular objects—the developing parasites—could be seen in the eggs, which had then begun to show very faint orange traces. By the next morning the cluster was beginning to blacken, and by Tuesday it was quite black. By Wednesday of the following week the parasites had emerged, thus giving about 12 days from egg-laying to adult. On another occasion on a West Coast estate I came upon a parasite at rest on an egg-cluster. I brought it from the field, and carried it on a railway journey of 11 miles to the ferry wharf. While waiting for the ferry steamer darkness began to come on, and it was only then that the parasite became restless, and flew away to seek shelter for the night I supposed. The parasites are so tiny and frail, and must often have to search so long and hard for fresh egg-clusters that it is not to be wondered at that when they discover one they become oblivious of everything save the immediate business in hand, viz., that of parasitizing the eggs in order to continue their own species. Neither of these parasites has been identified by a specialist, but the yellow one is probably *Trichogramma pretiosa* which is found in the West Indies.

Although the yellow one is oftener met with, instances may be observed where eggs over entire fields have been parasitized almost exclusively by the black one.

Another important parasite of *Diatrœa* is a Braconid corresponding to one in the local museum named *Iphiaulax medianus* by Cameron. It is red with wings fuscous, but nearly hyaline towards the base, and with stigma yellow or ochraceous. It parasitizes the caterpillars singly, and is at certain times plentiful in severely infested fields. The adult female parasite on alighting upon a cane, searches for a *Diatrœa* boring,

and having found one is informed of the presence and position of a caterpillar within the cane probably by the vibrations set up by its gnawing and movements. She then endeavours to reach it by thrusting her long ovipositor up into the tunnel or boring. If the caterpillar be beneath a leaf-sheath which it has nearly gnawed through, she gets at it by piercing the leaf-sheath at the spot where the caterpillar is eating. The *Iphiaulax* larva is dirty or yellow white, and feeds externally on the caterpillar, at first just gently imbibing its juices, but when full growth is approaching practically eating it up. Near the last stages growth is so rapid that it can double its size in a single night. If it be detached from a caterpillar, it appears usually to be unable to regain its hold, with the result that it perishes. In the tunnel of the caterpillar it constructs a white or dirty white cocoon in which it pupates, the perfect insect appearing about 12 to 14 days after. The cocoon is cylindrical, flat at the ends.

The female *Iphiaulax* seems to endeavour to select for attack full-grown or nearly full-grown caterpillars. She certainly, however, makes mistakes sometimes, and attacks caterpillars that are not big enough to afford sufficient nutriment to her larvæ which therefore perish. We can excuse her, since she does not see the caterpillar she attacks. I have come across instances where larvæ have finished off their caterpillar, but to be faced with death by starvation.

A caterpillar with an *Iphiaulax* larva upon it is always observed to be in a state of coma or paralysis no matter if the larva be so young as evidently to have been not long disclosed from the egg. In fact the larva being an external feeder would run the risk of being fatally bruised against the walls of the tunnel by a violent movement of the caterpillar, or of being jerked off its back to perish ultimately of starvation, were not the caterpillar thrown into a state of virtual quiescence. I have not determined satisfactorily the manner in which the paralyzed condition is produced. Can it be by some act of the adult female *Iphiaulax* at the time she lays her egg? It would hardly seem so, as the Braconids are not poison-secreting hymenoptera. Even assuming that it results from some act of the female at the time of oviposition, the paralyzed state does not perhaps occur immediately, for on two occasions while breeding *Diatraea* moths from caterpillars collected from the field I got out an *Iphiaulax*, and the caterpillars which gave the parasite had at first been quite as lively as their unparasitized fellows. Indeed, I was quite unaware that any of the caterpillars was parasitized, as none, when collected, had parasite larvæ upon them. It seems more likely that the paralyzed condition is caused by some act of the parasite larvæ in their earliest stages. In every instance where I have found young larvæ they have always been affixed to the thorax at a point immediately behind the head, and paralysis of the caterpillar probably results from the larvæ attacking, as a first act after hatching from the egg, its nervous system.*

* See Note 3 at end of article.

The gangs which estates employ to cut out the *Diatrœa* caterpillars from "dead hearts" destroy a number of this useful parasite. When they cut open the "dead hearts" in search of the *Diatrœa* caterpillars, larvæ and pupæ of the parasite, if present, often get fatally injured, or the larvæ are put into the tins where they perish among the heaps of writhing caterpillars. Such destruction is unavoidable, as it is impossible to tell without cutting it open whether or not a "dead heart" contain a parasite. Even the mere displacement of the parasite larvæ generally means its death since it is, as already stated, usually unable to regain its hold on the caterpillar.

Two other species of *Iphiaulax*, besides *Iphiaulax medianus*, are seen in canefields, and they are probably parasites of *Diatrœa* or of some other cane-pest.

Cremnops parvifasciatus, which the local Museum possesses a male named by Cameron, is also a Braconid parasite on *Diatrœa* caterpillars. It is not as common an insect as *Iphiaulax medianus*. It is red with the thorax largely black.

An Ichneumonid parasite of the caterpillars occurs in a species of *Mesostenoides*, but it is rare.

It may be of interest to mention that the adult *Iphiaulax* and *Cremnops* feed on the moist ends of seeds of the razor-grass, a species of *Paspalum*. *Iphiaulax* I have also observed sipping up the honey-dew which drops on leaves of plants infested by scale-insects (*Coccidæ*) and white-fly (*Aleurodidæ*).

The big black ant known as the kop-kop carries off *Diatrœa* caterpillars which happen to be met with strolling abroad as they sometimes have to do when seeking fresh food. A single ant is strong enough to walk off with a caterpillar, which resists with all its might, contorting itself and frequently clinging desperately to various objects encountered *en route* to its captor's abode.

Another black ant abundant in many cane-fields is the "running ant," probably identical with the one which often infests houses. Quite recently I saw a number of them devouring a fresh *Diatrœa* egg-cluster, so that they must be regarded as beneficial.

The practice, which so widely obtains, of burning the trash from the canes destroys large numbers of both these useful ants, as both often nest under the clasping bases of old dry blades.

The larvæ of Carabid beetles are predaceous, and three or four times I have come across one of these larvæ attacking *Diatrœa* caterpillars in their tunnels. They are active creatures, and roam about, when necessary, in search of their prey.

Metamasius hemipterus, the weevil-borer which attacks cane-tops, stems and shoots at weak points, has a hymenopterous parasite in the

shape of a Braconid, which, as a larva, feeds externally on the larva of the weevil, for on one occasion upon splitting open a cane containing a weevil-larva I discovered a Braconid larva sucking it. I did not succeed in rearing the parasite, but the larva seemed the same as that of *Iphiaulax medianus*, already mentioned as a parasite of Diatraea caterpillars.

Mallophora calidus, one of the hawk-flies (Asilidæ) is sometimes met with in canefields, having an adult weevil-borer in its grip. The Asilids are a group of carnivorous flies, with strong bodies, and strong feet furnished with strong claws. They have also a hard sharp beak which they drive into their prey on seizing it. The larger kinds are capable of tackling such stubborn stuff as beetles, cowflies, bees, and wasps.

Aspidiotus sacchari is a scale-insect which sometimes forms very thick incrustations on the lowest joints of the cane, and on the stool underground, often including the roots and rootlets. It is parasitized by a minute hymenopteron.

Wood-ants are sometimes more destructive to cane-stools even than *Castnia licus*, the giant moth-borer. Kop-kop ants are great enemies of them. If a wood-ant nest be broken to pieces so that the insects have to disperse, kop-kops soon appear, and proceed to march off each with a wood-ant. When wood-ants are swarming they are liable to be harassed by several foes, among them being our common small social black and yellow wasp, *Polybia occidentalis*, which seizes them and carries them off.

The principal stool pest is *Castnia licus*, the large moth-borer, but it does not appear to be seriously attacked by insect enemies. Mr. Queleh has observed kop-kop ants attacking moths which have just emerged from the chrysalis, and which are then practically helpless, being unable as yet to use their wings in flight. He also found a fairly large carnivorous beetle larva which fed on the *Castnia* caterpillars in the stools. Subsequently I also obtained one of these larvæ, which I attempted to rear but without success.

In concluding this article I shall only point out that the planters' insect friends have in turn insect enemies. To give but two instances which have run into my mind. The pupæ of Coccinellid beetles which feed on the mealy-bug are sometimes found with little holes, thus proving they have been destroyed by hymenopterous parasites, while a beetle, one of the Rhipiphoridae, is parasitic in the cells of the mud-dauber, *Odynerus clavilinus*.

ADDITIONAL NOTES.

The above paper was written early in March. Since then I have gathered a good deal of further information on the subject dealt with, and with the kind permission of the Editors of the Journal, embody some of this in the following notes:—

(1.) In regard to *Caligo oregon* not only are the pupæ destroyed by parasites but the eggs as well, the latter being often attacked by a small

hymenopteron, several of which may be bred from a single egg. I have obtained as many as thirty-three from three eggs.

(2.) It is not only interesting, but amusing to observe *Chalcis annulata* emerge from a big Hesperiid pupa, that, for example, of *Perichares corydon*. They emerge rather damp, especially those first coming through the abdomen of the pupa, as they have to work their way usually through a mass of fatty tissue, and have to soften the outer skin of the pupa by a liquid exudation, while they are gnawing their exit holes. When a slight opening is made, the end of one or both fore-legs will now and then be protruded and withdrawn. Those which emerge near the head, or those which, deeply situated, can utilize the borings made by those that have already emerged, come out rather drier. The wet ones have a lot of rubbing and cleaning down to do before they feel fit for the duties which lie before them. Occasionally one presents a ludicrous sight by emerging with an antenna stuck down across its face, and several minutes may elapse before it gets it free.

(3.) When I wrote the first portion of this article I surmised that the comatose condition of a *Diatraea* caterpillar attacked by the parasite *Iphiaulax medianus* was occasioned probably by some act of the parasite larva. This turns out incorrect as I have since worked out the full life-history of the parasite, and have found that the *Diatraea* caterpillar is indeed paralyzed by the adult *Iphiaulax* at the time she oviposits, and that its young larva may attach itself to segments other than the thoracic. The life-history as given in my "General Report on Insect Pests for the year 1912," is as follows:—

"The adult female parasite alights on a cane shoot, along which she then walks, tapping it with her antennae, her every action showing plainly she is in keen search of something. On finding the orifice of a caterpillar tunnel she pauses and begins to insert her ovipositor into the tunnel. She soon gives three or four quick but slight jerks, and then remains quiescent. In about ten minutes she withdraws her ovipositor. She paralyzes the caterpillar at the time of oviposition, and the jerking movements no doubt occur when she is stinging it. She deposits her egg in the tunnel, and near the caterpillar. The egg is about three m.m. long, whitish, translucent, firm or leathery, narrow and elongated, tapering to a short point at the anterior end, but to a long point at the posterior. At the latter end there is a minute curved blackish hook which serves to keep the egg in position by catching into the cane fibres. The firm texture of the egg serves to protect it from injury should the caterpillar writhe against it.

"The egg-period is extremely short, being just about one day.

"The paralyzed caterpillar lives for three or four days from the time it is paralyzed till finally killed by the parasite larva. The larval period of the parasite is very short, about 4 days.

"The brevity of both the egg and larva stages can be very readily understood when it is remembered that the larva requires fresh food, and has only a single caterpillar on which to feed. It of necessity therefore has to get through it rapidly before extreme decomposition sets in and do all its growing in that short time.

"After its feeding is over, the larva spins a cocoon, which may be white or dirty white, in the tunnel of the caterpillar. Once in a way a cocoon will be found between a shoot and the clasping base of a leaf-sheath showing most

likely that the caterpillar when attacked by the adult parasite had been feeding beneath the leaf-sheath. In about 14 days the perfect insect emerges, so that the time from egg-laying to adult is about 19 days."

"The perfect insect can live for a long time. I have kept a male alive for 53 days by feeding it about every three days with a little sweetened water. As this and the other caterpillars-parasites deposit their eggs one to a caterpillar, with probably long intervals between the depositions it is necessary for them to have an extended life as compared with parasites which deposit all, or a large number of their eggs, to a single caterpillar."

(4). The larva of *Cremnops parvifasciatus* feeds internally, and not externally like that of *Iphiaulax*, while the attacked caterpillar keeps feeding and healthy-looking almost until the parasite larva is about to break through and weave its cocoon. When this period approaches, the caterpillar becomes sluggish and ceases to feed, while in another day or two it is totally consumed, only the hard shell of the head, and bits of the skin being left.

(5.) Somewhat common in cane-fields is the larva of a beetle, probably that of one of the Elateridæ or click-beetles. It is found in *Diatræa* borings, in decaying cane-tops, and in decaying cane-stools. It feeds on the larvæ of *Diatræa*, on pupæ (perhaps larvæ too) of the weevil-borer, and probably also on various organisms that frequent decaying vegetable matter. It attacks the *Diatræa* caterpillars in a manner that calls to mind how the larvæ of *Aspidosoma maculatum*, one of our common coast fire-flies (*Lampyrivæ*) attack slugs. The caterpillars writhe and twist in vain efforts to escape from the fatal grip. These Elaterid larvæ are often taken by estate gangs cutting out *Diatræa* caterpillars from dead hearts. They should not be collected but left in the field. It was Mr. Bodkin, the Government Economic Biologist, who first drew my attention to the fact that they were predaceous on *Diatræa* larvæ.

(6). Another enemy of *Diatræa* is the larva of a fly, of the family *Stratiomyidæ*. The adult fly is somewhat wasp-like in shape, and of a brilliant metallic hue, and is at certain times fairly plentiful in cane-fields, where it may generally be seen at rest on the cane-blades. The larva has moderate powers of locomotion, and attacks the caterpillars in their tunnels. It is broad and flat, pale straw colour with three rather conspicuous longitudinal brownish stripes. The head is small, and the mouth parts pointed and well suited for piercing. The pupal form is assumed within the larva skin, which retains its usual appearance, so that there is nothing to show that the change from larva to pupa has occurred, save what is apparently a lifeless larva.

(7). Up to the present I am acquainted with thirteen or fourteen insect enemies of *Diatræa* and there are probably more yet to be discovered.

SOME OF OUR FOOD FISHES.

By J. RODWAY.

Fishes may be treated from a scientific standpoint, as Professor Eigenmann has so well done in his new book on our fresh-water species, or for their economic value. There is also their beauty and their fitness for the conditions under which they live. A great deal of confusion exists in regard to the popular names, some of which cover several species and others are rather vague; I shall endeavour to put these in some kind of order, but I may state that my identifications are open to correction and therefore are only tentative.

Our edible fishes may be roughly divided into three great classes, first the scale fishes which form the majority, second the skin fishes, mostly Siluridæ, with sharks and eels and, last, the toe-nail fishes, the Siluridæ with plates, such as hassars and Doras, which the creole has so named from the resemblance of the plates to a paring of the nails. There is a strong prejudice among some people against skin fishes, possibly connected with what is called "kinna," that feeling which is expressed by saying "our family does not eat skin fish." That this prejudice is unreasonable is proved by the fact that many of these fishes are not only wholesome but really good. Some however repel by their slimy appearance and others suggest repulsive habits, especially when they are known to feed on mud and filth. But even these may be wholesome, and so nice that one of them has received the name of "Gold-digger lose his passage," possibly because some one was so occupied in having a good feed that he forgot the time.

Fishes may be further divided into those which are only found in salt water, generally at a considerable distance from the shore, those which frequent the mouths of the river and come into our trenches, and the true fresh-water fishes, only found in the upper parts of the rivers and creeks, but coming into our fresh-water canals. It may be generally stated that the more beautiful fishes belong either to the blue sea or the dark waters of the interior while dull-colours predominate in those of the muddy water.

Probably, the most popular fish for the table is the red snapper (*Neomænis aya*) which is as nice as it is beautiful. It may be compared to a magnified golden carp, in fact boys seeing gold fish in our aquarium ask if they are young snappers. The grouper (*Epinephelus adscensionis*) is also very nice but not so glorious in colour. In connection with this species I may mention that in 1797 our Court of Policy thought fit to regulate the prices of several commodities then sold in Stabroek Market. Among the fishes was one named "Jacob Everts," which puzzled me for a long time. At last I found out that it was the grouper and that it

received its name from the markings being compared to those on the face of an old sun-burnt and peck-marked Dutch skipper named Jacob Evertzen

It will be interesting to note what fishes were sold in the market over a century ago and compare them with the fish supply of to-day. Besides Jacob Evertzen there were Queriman, Pourtouche (Porgy?) Bashaw, Mullet and Cartaback, all put in the higher class to be sold at a schelling and a half per pound (.15c.); all other kinds were to be five stivers (.10c.) We may safely state that those in the first-class are worthy of their place, but they are by no means all the good fishes we have.

The Porgy (*Stenotomus chrysops*) is not equal to the snapper but it is a good sea fish, and is to be found in the market. Possibly the jew-fish (*Plectropoma chlorurum*) is one of the most popular of sea fishes if we judge by the price (16 cents) at which it was once readily sold. Forty years ago we sometimes heard an old Portuguese man on the streets ringing a bell and repeating in a sing-song way—

“Jew-fish in the market, two bits a pound,
Who don't want it, leave it alone,”

Other sea fishes might be got from the blue water, and it may be safely stated that there is by no means anything like a full supply.

Coming now to those scale fishes which are caught within an easy distance in brackish water, I give the first place to the Queriman, which when small goes under the name of mullet, (*Mugil curema*). This is undoubtedly very nice, under either name; it is also clean-looking, silvery with dark stripes. The bashaw (*Plagioseion auratus*) is a good fish but not equal to the mullet. In the young stage this, and several other small silvery species, are known as butter-fishes, possibly from their being fried in butter. In these, and in fact most fishes, much depends upon the cook, who can make appetising dishes of many kinds that are others rather tasteless. Butter-fishes include, besides bashaws, *Nebri-microps* and *lungomaree* (*Macrodon ancylodon*). The Snoeks (*Centropomus ensiferus* and *C. undecimalis*) from the Dutch name for pike, are easily recognised by their tapering snouts; they are very nice when properly cooked. Among our fishes are herrings and sardines, so-called, but they cannot be compared with the real kinds. However, they would make fair substitutes if properly prepared and if they could be obtained in quantity. Shoals of fish such as are seen in northern seas are however quite unknown here; it follows therefore that with only a few here and there fish-curing is practically out of the question. The Guiana herring is *Hisha flavipennis* and the sardine or anchovy, *Stolephorus spinifer*.

Coming now to the scale fishes of the rivers and creeks probably the most important is the pacou (*Myleus pacu*). This has been always plentiful in the North-West and was brought to the settlements in early times in large quantities, after being split and dried on the barbeque.

Whether fresh or dried it is an excellent fish, much superior to the salt cod of the shops. It grows to a fair size and is oblong in shape with a thick fleshy body; the colour is brownish red with black blotches. Allied to the pacou are several other fishes which also have been much appreciated by epicures. The cartaback is spoken of as being excellent, yet only those who live up the rivers get an opportunity of tasting it. It will be noticed however that Stabroek Market was better off in the olden time for it must have been sold there. I have had great difficulty in identifying the species; even yet I cannot say with certainty what it is. There appear to be several species sometimes distinguished as large and small, probably better known among the Indians. The smaller are species of *Metynnus* and the larger *Mylopus rubripinnis*? All are very deep in outline as broad as long, giving the impression of a disc. The colours are bright, the silvery sides being especially brilliant. Whether the perais (*Pygopristis* and *Pygocentris*) are included among the Cartabacks is uncertain; they are however allied and are said to be good eating. Unlike some other disc-like fishes these have a fair thickness of meat.

The perais are the most dangerous fish in our upper rivers. Unlike most other fishes they come round any struggling animal and being so numerous cut it to pieces before it can escape. The cleaning of a fish at the water-side is dangerous in presence of a shoal of these fishes for they will bite off a finger before a person is aware of their advance. Ducks lose their toes in many cases and have learnt to keep to the shallows where the water is not deep enough for the disc-like bodies of the perai.

The teeth of the perais resemble those of the sharks, except that there is only one row in each jaw. The consequence is that a clean cut is made in an instant. Although so dangerous they are very beautiful.

It may not be out of place to mention here that the teeth of fishes are varied to a wonderful extent and are often found in other places than the jaws, in fact, they may be anywhere in the mouth down to the gullet. There seems to be no system like there is in the mammals; in some cases they resemble incisors and in others canines, but true molars are replaced by curious processes, which in the rays are like small pavements between which molluscs are cracked as if they were nuts. Another curious set are those found in many of the skin fishes, which may be compared to wire brushes. A large number have no teeth and in some the mouth opening forms a sucking disc with which a strong hold is secured to rocks and fallen trees where the river currents are strong.

Our largest fresh-water fish is the arapaima (*Arapaima gigas*) which has been reported sometimes to weigh as much as four hundred pounds; this however must be exceptional, the larger specimens generally caught being only about one-fourth of that weight. It is undoubtedly a grand fish, and in Brazil where it is known as the pirarucu it is commonly salted and used by travellers instead of the well-known cod. As it is only found beyond the rapids the people of the coast never get an opportunity

of testing its flavour. If we may judge by its popularity among the Indians it must be very good. The arawana (*Osteoglossum bicirrhosum*) is a smaller fish found in the same localities as the arapaima; it is said to be tasty but with too many bones.

The cuffum or tarpon (*Tarpon atlanticus*) has a wide range from the coast up the rivers. It is sometimes found of a large size but we rarely get such monsters as are caught in Florida. It is eaten here but generally considered rather insipid.

The biara (*Hydrolycus scomberoides*) has been compared to a salmon. It is very beautiful but at the same time gives the impression of great ferocity from the long movable teeth. It is fairly plentiful at times and can be seen mounting the rapids in a similar way to the salmon. It has been suggested that this fish could be canned as salmon, but from what we know of the habits of our fishes we do not consider that any one species is plentiful enough to be economically taken for such a purpose. Neither sea nor fresh-water species seem to go in large shoals as they do in more northern countries; it follows therefore that great fisheries are practically impossible.

Three fishes that may be compared with the biara in ferocity are the haimara (*Hoplias macrophthalmus*), huri (*Hoplias malabaricus*) and yarau (*Erythrinus erythrinus*). The first belongs to the upper river districts but the two others are common in our fresh-water trenches. All are good table fishes and the two latter form a large portion of the supply of our villages and plantations. The sun-fish (*Crenicichla saxatilis*), one of the loveliest of our fishes, is also fairly common. These are active carnivorous species which make a stir in the water when they appear among the slower species.

When we see a lot of small fishes swimming for dear life or taking flying leaps from the water we may assume that one of these ferocious creatures has appeared.

One of the most beautiful of our fishes and a really good one is the lukanani (*Cichla ocellaris*). It is hardly known near town but in the upper Mahaica and the Lamaha it is fairly common. The eye-spot on the tail is margined with golden yellow, as are also three dark bands on the sides. There are great varieties in the markings, but all have the eye-spot on the tail. Some epicures complain that it is bony but the general opinion is that it is a good fish for the table.

Among the fishes of small size the patwas are perhaps most common. The name of the patwa is given to quite a large number of species all of which are however deep in outline and are closely allied. The most common are *Cichlasoma binaculatum* and *Mesonauta festivum*; these are everywhere. They rarely exceed six inches in length but there are larger kinds known as black patwas (*Geophagus* and *Chaetobranchus*) which reach eight or ten inches. Properly cooked they are very nice.

A class of fishes is known as fresh-water mullets (*Hemiodus notatus*, &c.), also banded fishes called kibih from the bands resembling the tail of that mammal (*Anostomus fasciatus* and *Leporinus fasciatus*). These are very useful fishes, about the size of small herrings.

Anyone who has watched the tide coming in must have noticed the shoals of four-eyes (*Anableps*) and perhaps wondered why some of them are not caught by the fishermen. There seems to be no reason for neglecting them except the prejudice against them as gross feeders. Possibly they might be salted like pilchards and become a valuable addition to the food supply. Being the only fish of any size to aggregate in vast numbers, it would certainly be worth while to make an experiment. These fishes are not only common on the sea-shore but they are found at long distances up the rivers.

A very large class of small fishes may be compared to sprats. Most of them are known under the name of Silver-bait, corrupted into Sillibay. The larger are species of *Tetragonopterus* and *Charax* and form an addition to the food supply. Sometimes they are dried and possibly they could be put up as sardines.

Coming now to the skin fishes, the most important is the gilbacker, which is not only valuable for food but also for the isinglass or fish glue which is of importance as an item in our exports. The question of what is the gilbacker has given me some trouble; it is supposed to be *Sciadeichthys parkeri* but I am inclined to think that several allied species also produce the isinglass. The gilbacker of the market is known also as kokwarri and is very much liked by those not prejudiced against skin fishes.

A fair number of skin fishes are to be found in the market under the names of cuirass, kossi, kakanettes, milk fish, tanpoco, twee-twee and cat-fish. Most of them are considered inferior to the best fishes and are sold cheap, but judging from the small stocks left on hand there is no difficulty in finding purchasers. That the prejudice against them is unfounded is quite certain and it would be well if our people could be a little more reasonable in their likes and dislikes, instead of being governed by "kinnas."

The name cuirass suggests that the armour-plate behind the head was noticed at the time when armour was worn. The name is general rather than particular for many of the *Siluridæ* have such plates and I have had different fishes pointed out as cuirass, including that the head and back plate of which is compared to a crucifix and sold as a curio. This is *Sciadeichthys proops*, which is, probably when full-grown, called gilbacker.

The low-low (*Brachyplatystoma vaillanti*) is a skin fish as large as the gilbacker attaining ten or twelve feet in length. The flesh is said to be firm and comparable to veal; it is much relished in the upper river dis-

tricts. An inferior kind of isinglass is collected from it. The dawalla (*Hypophthalmus edentatus*) and the tiger fish (*Pseudoplatystoma fasciatum*) are also much relished by Indians and bovianders.

Toe-nail fishes are so called by some creoles from the resemblance of the armour plates to nail parings. They are closely allied to the skin fishes but deserve special mention for their peculiarities. To this section belong the hassars, the common species, *Hoplosternum littorale*, being one of the most delicate fishes in the world. In soups, stews and pepper-pot it is relished by everyone and may be considered an epicure's fish. Covered with a coat of mail and living in mud there is nothing attractive in its appearance, yet it has been picked out as superior in taste to all the lovely denizens of our waters. Other species are not popular, one called the sea hassar, which however cannot live in salt water, is not considered edible, but I cannot see why. This is *Plecostomus watwata* and there are other species of the genus, all of which have stronger armour plates than the hassar. This protection however culminates in the Doras, some having strong spines on every plate. It may be mentioned that many of the skin and toe-nail fishes have their pectoral spines sharp and covered with thorns or spines which, when the fish is caught, will inflict severe cuts on the hand as the fins are spasmodically moved. At the same time the fish emits a grunting noise which together with the scratch often causes it to be dropped.

Sharks, saw-fish and rays form a class that is not much appreciated for food. I have however seen an angler catching sharp-noses (*Carcharinus oxyrhynchus*) and hammer-heads (*Sphyrna zygena*) off our wharves and no doubt young sharks are very good. Saw-fish (*Pristis perottetti*) are also eaten. Skates, rays and sea-devils are looked upon with disgust, but there is no reason why they should not be utilised.

Eels are never eaten by the creoles, in fact they are looked upon as water-snakes. The universal *Anguilla chrysypa* is sometimes found here but the more common eel is the *Lycodontis ocellatus*, the mooray, which is probably as luscious and wholesome as the other. Occasionally a conger is seen in the market, but I understand that their only use is for bait. Were it not for unfounded prejudices many kinds of wholesome food could be utilized.

The electric eel is sometimes eaten by the Indians of the interior but its shock is so little relished that fishing for it is not common. Allied fishes called logo-logo (*Eigenmannia virescens*) and curiberu (*Gymnotus carapus*) are sometimes eaten but there is very little meat on their flat ribbon-like bodies.

Two soles (called flounders) are sometimes to be had in the market; one is *Archirus lineatus* and the other *Soleonasis finis*. They are said to be much liked by Chinese, but as no supply is ever obtained our cooks probably know nothing of the usual method of preparing them. Possibly they might be got in quantity if there were a demand.

In conclusion it may be said that our rivers, creeks and trenches abound with fishes, all of which are wholesome. The supply is fairly large, especially near the railway station, Georgetown, and in the villages, but it is rarely that a good selection can be made in the Stabroek Market. There is no system and no arrangement, except in the case of the Ice Depôt, for keeping fishes beyond a few hours. Possibly in the near future ice will be used to a greater extent, with corresponding advantage. We want to be able to get to order any fish we require, which at present is impossible.

NOTES ON THE FISHES OF NEW AMSTERDAM MARKET.

By the Rev. JAS. AIKEN, M.A.

I have been asked by the author of the foregoing article to add a note on the fishes of the New Amsterdam market. For the most part they are of course identical with those mentioned by Mr. Rodway as for sale in Georgetown, except for notable omissions such as Snapper which, so far as I know, does not appear on the Berbice cook's list. The local names in use are in some cases different and the group represented by Lau-lau is extended by Manari and Bringle or Blaika, distinctions made by the fishermen of the lower reaches of the river as well as by the Indians of the upper reaches. Blaika is known as an isinglass yielding fish almost equal to the Gilbacker. The swimbladder of the former is broader and thicker but shorter than in the latter. A fish named Tampoca similar to Gilbacker is spoken of by fishermen and Kakwarri and Sand-koker fish seem to distinguish the larger and smaller specimens of one species. Cooleetee, which is caught, as are also Blaika, Manari and Lau-lau when the sweet water is felt as far down as New Amsterdam, is distinguished in the higher reaches from Tiger fish and may be the *Arekaima* (*P. arekaima*) or perhaps *P. notatus*. On the Cooleetee, I found at De Velde in February of the present year a very curious fish tick of which I hope to give a description and drawings in a subsequent issue of this journal. Meantime I have sent the specimen away for identification.

In the Catfish group Highwata fish, Bum-bum and Dawalla are distinguished, and amongst the Bashaws, Table-bashaw, Dag-bashaw and Snapper-bashaw which latter is red "like snapper" according to the somewhat vague reason given me for the name. Probably the 'Grouper' of the Georgetown market and one of the Bashaws known in New Amsterdam is identical. A "fish that eat barnacle" of which I have heard is probably, from the description of the big strong spine of the dorsal fin, one of the Loricarias while Salmon Garfish have been named to me as used for food. Hoomah is considered distinct from Perai, and a curious variant of the name Banja-man is Banja-mary. The local fishermen stoutly avers that "butter fish" is "butter fish" and nothing else, but in

the case of mullet he admits some close connection or occasional confusion with young Queriman. I may add however that considering the difference in the size of the scales of Queriman, even when small, and those of the fish usually called mullet it is not easy to see how they can be confused. Congo fish and Sea Congo fish the latter also known as Parea are usually on sale in New Amsterdam. they do not appear in the Georgetown list given above, but may be identical with some. The Sea Congo caught on Corentyne Coast is often a very delicious fish, but in New Amsterdam waters it seems to lose some of its delicate flavour.

Lukanani is practically never seen in this market, and 'Sardines' and silverbait are not known by these names, but doubtless some of the small fish used by the people may be identical with the fish so marketed.

The Canje Creek of course swarms with Cuffum. Perai, Lukanani and Jew fish, sometimes of enormous size. The three first named haunt the higher reaches and are seldom caught near the mouth.

The Pacu is known as Family fish : for what reason I cannot say.

Sharpnoses bear the name of Sword fish locally and Saw fish are known as Comb fish.

SOME AXIOMS OF CORPORATE EDUCATION.

By JAS. AIKEN.

Two writers in recent numbers of "Timehri" have succeeded, in the course of interesting articles, in presenting the history of the organisation of education in the colony from very opposite points of views. It is characteristic of thought about education, not only here but the world over, that opposite points of view are possible; which merely shows that the science of education is still in want of its Newton and its Principia in which elementary laws shall be laid down authoritatively and finally.

In the disputes between opposing schools of educationists about the merits of Classical as opposed to Technical curricula in Secondary, and Literary as opposed to Practical lines of teaching in Elementary Education, we are reminded of the scholastic debates over the causal relations subsisting betwixt the man and the pig, when a string links them together and a goal of aspiration is postulated. When delivering an address on "Practical Aims in Education" recently, I was particularly struck by the phrase "learning for its own sake" turning up in the remarks offered by one of the teachers in my audience.

Perhaps no shibboleth has ever been responsible for more sloppy thinking about education than this trite mascot of the conservative school. It is supposed to be a complete answer to all advocates of a rational system of teaching, which seeks to give full consideration to the human subject *in esse* and *in posse*, the child what he is and what he shall become. It assumes that a liberal education consists in acquaintance with a certain range of facts and verbal exertations which have, by force of circumstances unguided by any very clear principle, come to be regarded as constituting "Polite learning." There is in it an echo of the century or so in which the idea prevailed that, for a gentleman who in Parliament had to deal with the administration of the agricultural, industrial and social development of a long-suffering body politic, the only equipment needful was a pretty turn in riposting with Latin quotations.

When the history of learning in Europe is considered, however, it will be seen that such curious phenomena as that mentioned are quite accounted for by the growth under monastic conditions of the ideals by which it was governed. For several centuries after the influx into England of the Norman and his following of rough men-at-arms, it was scarcely fashionable for a knight to be able to write his name. Naturally, when these stout fellows of humble origin found themselves, by a fortunate sword-stroke, barons with unaccustomed manors, serfs and power and a retinue of faithful retainers, cousins, brothers and fellow villagers, for whom they had sent to their native hamlets, they retained for generations the atmosphere of the plough land or the smithy. The engaging

naïveté with which nicknames were turned into titles of honour so that the descendants of Richard the strong bowman and Raymond the poor, with no sense of the ludicrous, bore quite flauntingly the proud appellation of Strongbow or Power, is sufficient indication of the uncouth humour of the Conquest.

One can easily imagine how little the secular learning of the most cultured people of the island they had conquered would appeal to the lusty ruffians. The literature and music of Wales and Ireland, the manners gentle and refined of the princes and chiefs, to whom they found themselves superior in the only values they recognised—those of armour and warlike equipment, of which they had learned the use in France—were, by the uncultivated Norman, not at all appreciated. Instead he applied himself vigorously, according to his lights, to grasp by the strong hand such things as he had use for and to destroy all else the appreciation of which was beyond him.

On the other hand his scarcely depaganised superstition induced him to stand in awe before the learning of the priests, when by chance they possessed any, who accompanied the Norman's banner blessed by the Pope of Rome. It was in that age that the tendency of learning was fixed, and the lines laid down upon which polite culture would, for ages, run. When bye-and-bye kings took to founding Universities it was for churchman's learning they were endowed and it is not difficult in the cloistered atmosphere of Oxford and Cambridge to trace still the tone of mediæval seclusion from worldly interests and practical life directly born of the clerical scholarship for which those seats of learning were conceived. Nor would it be other than a loss in some senses if the tradition of meditative repose in these places should give way to the bustling methods of training needful to equip fighting men in Norman days or men of affairs of the present time. In a huge and very rich community like the England of to-day there are numbers upon whom there presses neither necessity nor inclination to enter the lists. Be their fathers barons or brewers does not much matter, a cloistered refuge has a clientèle, just as it had of old. Under present social conditions all sorts of men have their use and possibly some may be spared for cloistered scholarship. That is the only sound argument I know of for the conservation of the ancient university ideal and, curiously, I have never seen it put.

I have made this brief excursion into the origins of learning in England because our view of things to-day is largely dominated by its history. By a curious confusion of incidents with principles, the conservative school of educationist quotes the Greek method of culture in support of their ideal, and imagines even that his ideas of pedagogy are on lines similar to those which built up Athens and Corinth. The merest glance at the considerations above given will show how utterly astray is this notion. Greek education, as it is usually understood, was the education of an aristocratic guild and had the very definite and practical aim

of equipping its subjects for the business of the life of a governing and warrior class, in the public assembly, law courts and battle-field. Music, gymnastic and rhetoric were no cloister studies but, in every one, the student was hardening thew and sinew of body and mind for contest in various fields of activity. The Greek had no illusions about the education of the peasant or slave either. He saw to it that he too was as thoroughly trained as his master, but in a way suited to the particular business in pottery, leather, stone, iron, silver or manuscript-making in which he was to produce masterpieces which have been the despair of the world to equal: neither Stoa nor Stadium was his schoolroom, however. The Greek, in short, was distinctly commonsense in his methods of education, and the fact that Greek literature has become a part of University curricula does not by any means bring these codes into line with Greek education, any more than the fact that Latin was a sort of ancient volapuk makes it by any means the best of ancient tongues for drawing out the humanities. For the matter of that had Arabic, for example, happened along instead we should, in our classical studies, have had an infinitely richer mine of learning than the, in most departments, rather poor literary remains of the Latins offer, the merit of whose rhetoric, drama, verse, and history is mostly in their pale reflection of the excellencies of Greek makers.

It would, however, have brought our education system much nearer into line with Greek methods of culture had we concentrated upon the cultivation or creation of a living native literature instead of dead foreign ones. As it happened the Norman, by evil communications in his Gaulish home, had lost touch with his own native tongue and its sagas, while the Saxon, with whom he came into contact in England, seems never to have had the vivacity to produce much in the way of literature. Worse still, the animosity of attack and reprisal and difference of religious allegiance closed out his sympathies, as we have seen, from the literature which did exist, especially that of the Keltic races which might have supplied the soil element so important in giving vital worth to a national culture.

Thus the way was left clear for "Learning" to come to mean "Latinity" and the struggle to begin between humane instinct and polite tradition which has gone on from Chaucer down to Mr. Kipling. The struggle between various schools of education is just a phase of it, made acute in these days by the pressing necessity of a citizenship efficient in competition with other nations. The first condition for the attainment of such efficiency is that the system of training should be racy—a natural development of the powers natural to a race. With patience and determination it is possible to make a bear a dancing animal, but he'll dance awkwardly however severely you train him. He is not much gifted that way. You may try to make linguists of the people of South Britain and have a certain modified success, but the Slav will beat him out of sight, because he has the natural facility, which the mixed race we call the English does not possess. The latter has other faculties quite as worthy

and useful which it is much more profitable to aim at developing. The educational system that does not take account of native gifts is not desirable. It follows from this that no system or code, however excellent for a particular people, can be imported cut and dried for application to a race of different character and under different conditions of life. As our efforts in the colony have been mainly on the lines of importing "cut and dried" the codes rather promiscuously evolved in the United Kingdom, it is just here we put a finger on the radical defect of our system. When the first Council on Education in 1850 reported that "the system of education was defective and ill-adapted to the peculiar wants of the people" I have little doubt their conclusion was absolutely sound, though it is reasonable to suspect that in those days there was not very much system of any kind. The pity of it is that the more we have organised and systematised since 1850, the more "defective and ill-adapted to the peculiar wants of the people" has education become. The colony is not peculiar in this however. Organisation based on indefinite grasp of the elementary psychology of the subjects, and vague ideas of the objects of education has had the same result elsewhere. A codish insalubrity has been a marked feature of the Home educational atmosphere since Boards were invented. That of course is not an essential fault of Boards, consisting for the most part, so far as my experience goes, of worthy men who are quite anxious to do their best, but of the want of a science of education which will lay down laws for their guidance.

It is pretty clear that the more systematic official codes have become the less effective they have been from the man trainer's point of view. That is doubtless because, under a less elaborate and comprehensive wrongness of system, the spontaneous or instinctive exercise of faculty had more chance. It may sound subversive of all law and order to say so, but it is, I believe, true, that in human affairs it is better to leave things to nature, than under a mistaken theory to dragoon men into a uniform monstrosity. Happily, in spite of thwarting influences, nature will out, and it is to the palliative working of a hidden world spirit and not to the official codes that we must attribute any good that has come of education in the second half of last century. There are, however, cheering signs that a definite movement has come into being with "self-development" as a watchword. As a writer in the "Morning Post" some months ago pointed out, the fact that the House of Commons had actually discussed an educational principle, as distinct from a question of apparatus, incidence of costs or control of education, is itself a sign that the public is beginning to realise the existence of a right and a wrong way of educating.

The pioneers of the movement have a big task before them. When the whole system of examination tests as they exist at present "external results" and "mechanical obedience" which they abhor is overturned, they must be ready to replace that system with something else.

That something must stringently base its validity on particular knowledge of the human factors it has to deal with.

The main questions to be dealt with will be "What in the given man of young humanity to be cultivated, are the undeveloped capacities." "What is the environment of which the best is to be made" and "What type of development may desirably and economically be aimed at under all the circumstances."

Prominent among the capacities common to and distinctive of humanity of all races there is one which has been sadly ignored in education. That is the capacity of manipulation. It is of all other things elementary, not only in the history of the emergence of humanity but, I am disposed to think, in the development of mentality in the individual. Yet you may search the Code under which we educate our children in vain for a recognition of this fact. A distinguished man of science the other day pointed out that an analysis of the University records showed that the men whose names were prominent in the playing fields and on the river held much more than a proportional place in the honours lists of the schools. He goes the length of asserting, on the basis of this and other facts collated, that mental and physical growth, despite apparent exceptions, proceed *pari passu* in the average human development. Even though we may dispute this, there is very much less room to question the interdependence of manipulative power and the faculties of observation, comparison, imagination, and that complex of associated intellectual nervous and operative powers by which the grouping of parts and application of known laws to some useful end is ordered.

It is a matter of common observation that the weaver, the gardener, the wright and blacksmith show a much higher average of intellectual power than clerks and storekeepers drawn from the same class of society and if there has been a decadence amongst craftsmen in recent years, it is due probably to the factory swamping handicraft.

It will be admitted by most people that but for the gift of making implements, either the human race would have gone under in the struggle for existence, or we should in this second decade of the Twentieth Century still be spending our life in tree-tops, cracking nuts and catching locusts. Certain it is that in a strenuous argument with a cave bear or tiger, the finest periods of all the orators from Gorgias to Bright would not for a moment compare in vital efficiency with a well made club. More than this, the manipulative skill of a people broadly defines its place in the scale of humanity. Greek culture is as inconceivable without Greek arts and handicrafts as is Japanese civilization. The progress of a race in arts and industries may be taken as a very fair index to its brain convolutions.

Yet so vainly conventional is our conception of cultivated manhood that it is not uncommon to meet with people quite proud of the delicate refinement of a nurture that has left them taper fingers incapable of

performing the least complicated manipulative task. The development of the "knot" or the "dude" or the "fop," weird products of an effete civilization as they are sometimes considered, is in reality merely a bizarre expression of atrophied capacities, inevitable in a system of training in which the relation between hand and mind is ignored.

It is pretty clear that hand training should take a prominent place in our Codes. At present even where an opportunity for this arises, as in Agriculture or Nature study, so warped are the prevailing notions of instruction, that the attempt is made to teach these subjects largely from a book.

Books of course may be made of use in most subjects if great discretion be exercised by the teacher, but the elementary school of the future will see much less of them than does the present type; for, as Herbert Spencer said nearly half a century ago, "Intellectual progress is from the concrete to the abstract" while books are essentially an abstraction from the concrete.

How easy would be the progress of the pupil who has dressed and squared a piece of timber. from consideration of the concrete solid to the meaning of inches and other standards of measure, areas, squares and even cubes of the object actually in his hand. From this to the nature and structure of wood, the tree and its place of growth, the class of plant to which it belongs, the articles of use to which this timber may be put, and from that to references in literature to various trees is all by way of an easy sequence in which all the subjects of the codes, besides one or two not there, are naturally taught; correlation of ideas, comparison in respect of toughness, hardness, elasticity and so forth at the same time being induced in the pupil's mind. Or if he be set to dress a bit of stone and finally polish it, a similar wide field is opened up. The places where the stone is found, the rocks near it, some harder, some softer, some heavier, some lighter, the buildings and works for which it is adapted, would afford scope for reading, writing notes and making calculations which would induce an interested activity of brain—the aim of every teacher who understands his business. Here the mere knowledge gained is not the sole consideration, it is the correlated activities induced that is important, though it is at the same time true that knowledge comes more rapidly by way of the fingers than by any other sense organ. Even the primary conception of that vital group of facts of first importance in the art of living in a world of solid things—hardness, weight, conformation, solidity—would scarcely have become known without them.

So much however have the fingers been ignored in school systems that the ridiculous scholastic ideal of a class prepared to soak in knowledge is summed up in the preliminary command "Arms folded."

Let it be here remarked that all this has nothing to do with "Technical Education" primary or secondary, nor am I proposing to introduce Carpentry or Joinery or Blacksmithery or White smithery or Shoe-

making or any other trade into the school. Even if that were possible in this colony it isn't desirable anywhere; because it isn't the making of Carpenters or Coppersmiths with which schools are concerned, but the making of men and women, good and useful citizens. I would teach them to use tools not to make their living with them, but because it is likely to make them live better, and still more would teach them to use their fingers without many tools in knotting, splicing, binding, netting, plaiting every kind of every day material,—cord, fibres, bushropes, grasses, including bamboo and so forth which grow around their doors.

In a sane scholastic system the three Rs. would find their natural place, not as separate compartments but as incidents in mental growth. Abstractions with a definite relation to concrete things, necessary to their consideration and comparison. A greater burden would of course be thrown upon the teacher, but then it would be taken off the pupil, whose faculties would get a chance of developing themselves in a natural way, instead of being cramped by an unnatural method of instruction. It would also throw a greater burden on the Inspector. Docked of his traditional mechanical examination tests he would deserve and have our sympathy. But though our aim is properly to make life and growth simpler for the bulk of humanity the teacher and Inspector of Schools need not be special objects of our solicitude, for after all as a distinguished medical officer of the colony used to say "Hospitals are not run for the benefit of nurses but for the good of patients" and schools in like manner are intended primarily not for the benefit of the teachers but for the good of pupils.

When we find Mr. Balfour in the House of Commons thus boldly criticising present day methods: "Examinations are really most soul-killing institutions. I believe they put the human mind absolutely in a wrong position with regard to knowledge." The cheers with which his words were received should be a hint to the official pedagogue that it is time he reviewed his methods and tests, even if it entail some hard thinking.

The lines on which examination in the future will run are probably somewhat like those indicated by an experiment conducted for the United States Bureau of Education, by Professor Munsterberg, of Harvard University, on candidates for telephone and tramway services. He examined the girls "for memory, attention, general intelligence, space perception, rapidity of movement and association. His methods justified themselves in the result for those at the top of his list succeeded best while those at the foot were in actual service found deficient and finally left the service.

An examination of this sort is a humanity test as distinguished from the ordinary examination which at best shows only what a boy or girl can remember, and gives no indication of what he or she can do. Yet if schools are to be of any service it is surely in the preparation

of the pupils for living and doing, as Herbert Spencer has said, that their usefulness lies. In a Colony such as this where the inhabitants of all races are, without exception, working people, and no leisured class exists, there can be no question as to the type of preparation required.

The teacher is one who shows things to the pupil (from A.S. *tuccan* to show), instruction is the building up of a human being (from L. *in* and *struo*) and the pedagogue is one who leads a boy to manhood (from Gr. *paídos* and *ago*) while Education (from L. *ex* and *duco*) is the leading out of powers innate ; in other words development.

Even the most savage advocate of " Learning for its own sake " finds himself driven to justify learning finally by its advantages for humanity's sake, and it is probably due to the fogging effects of a vicious schooling that he is able to convince himself that these very different propositions are one and the same.

The humane activities which education postulates are grouped by Spencer under five heads (1) Self-preservation (2) Self-maintenance ; (3) Family life ; (4) Social life ; (5) Leisure.

The only justification for the expenditure of public money on education lies in the fact that citizens properly equipped for these activities are an asset of value to the State, and that, just in the measure in which a citizen is deficient in these things, he is a nuisance, a menace and an expense.

If the school is to justify its receipt of State or Colonial moneys by diminishing the number of incompetents and increasing the number of efficient, it must take account of these universal activities and consider the surroundings amongst which they are to be carried on. The elementary school cannot of course provide a full and complete training, but it may lay a sound foundation on which a worthy humanity may be built.

The attention of the pupil should therefore first be drawn to the wholesome and harmful things in nature around him ; The clever use of air, water, fire, exercise, rest and food for the advantage of his life and growth will properly occupy a prominent place in his early training.

No small part of the schoolmaster's work in this department will be the dissipation of wrong notions about air, water, insects and mammals, such as that " mosquito worm grow in day " " that butterfly snake or yellow-tail is poisonous, that " pimpla-hag shoot pimpla at you," and a host of other silly " nancy " stories. Then, in a colony such as this, self-maintenance will be mainly concerned with the use of the abundant opportunities an amazingly fertile soil and climate afford. A closer linking together of the Agricultural Instructor and the schoolmaster is here indicated and a sensible code will make provision for that. I venture here to make a practical proposal by which the whole system of

education might be suited to the conditions of the colony in the course of time.

There is at present a quite good "Teachers' Seminary" existing in the colony unsuspected by official educationists. I refer to the Experimental fields and the Agricultural Apprenticeships under the Director of Science and Agriculture. Offer Second Class Teachers' Certificates to the apprentices recommended by the Director on completion of their course, if they can pass a simple examination in Reading, Writing and Arithmetic up to Simple Proportion. If the apprentice has gone creditably through his Agricultural course, and has an ordinary equipment of literary efficiency, he has exactly the training that is wanted for an elementary teacher in the colony. The finger training, of which we have spoken, will function in cultivating readiness of resource in manipulating and adapting natural products to useful purposes, and in preparing the pupil for whatever handicraft or profession he may afterwards adopt as a means to a maintenance. Perhaps little can be done under the heads of the third and fourth activities, in the way of absolute training, but the healthy moral atmosphere created around him by a clean man, supplemented by carefully selected reading lessons most of which should be memorised as a regular part of the school course would function in preparing for the assimilation of a right attitude in social life. The first requirement in a schoolmaster, who is daily in contact with young and developing natures, should of course be a very high standard of moral health and Christian character. Probably, on the average, a denominational system of schools tends to secure this factor in humane influences better than a purely civil oversight has ever done. At least it is evident that the vagueness of outlook in respect to spiritual things, unfortunately common in this age amongst men of secular pursuits, limits the choice of civil officials equipped for the organisation of the training of young humanity. A statesman with a broad outlook on the relative values of different human factors, even without the bias of religious sentiment, will not ignore the way in which religion functions in the formation of that type of character which goes to make good citizenship. The confusion resulting from the existence of numerous religious sects conspires with the official passion for uniformity of system, to tempt the puzzled legislator to cut the Gordian knot by excluding religion from his school code. This, however, is no solution of a difficulty which in reality for the statesman as such, does not exist, at least until he has decided for the ends of statesmanship, that point on which theologians have never yet been able to agree, that there is one only absolutely desirable system of dogma and ritual. It would then be his business as statesman to see that this system and no other is the basis of training. Meanwhile his business is to recognise religion as a factor in the fair round growth of a comely type of citizen and to see that the best dispositions possible under the circumstances are made, to allow that influence its cultural effect. Just as in respect to technical training so in respect to becoming conduct,

the elementary school is to lay the basis, on sound general principles, of an aptitude which will later be of avail in practical application to the work and duties of the citizen in individual, in family, and in corporate life.

It will be well for the educational statesman to bear always very clearly in mind this dominant reason for corporate organisation of education, that efficiency in living is a corporate advantage. The State has no concern in improving the social status of the individual, nor in enabling him to earn more, still less in opening a door for him to pass from one Social class to another higher in the scale, but it has a concern in increasing the aptitude of each individual for service within the social economy. Confusion of these very separate and distinct ends has led to many of the complications of educational systems now in vogue, and in nothing is this confusion more evident than in the concessions of educational authority to the demands of the many for a curriculum in no respect specially adapted to the production of general efficiency, even the conventional value of which is, like the value of precious stones, dissipated as soon as it becomes more than the possession of the few.

The local educational question may well be reviewed from the platform of the principles we have been considering. The varying race characteristics are further accentuated by varying conditions of life which it is not in the power of the Government immediately to change, but which it is in its power to ameliorate or the reverse by suitable schooling or unsuitable. So far as native Indian schools are concerned the present codes are absolutely condemned by those who know anything of the conditions in which the life of the Buck is to be lived. So far the result of white man's organisation has in his case been simply negative. The codes have helped to suppress the artistic faculties native to the race by ignoring their existence in the instruction given which, if it has an aim, is intended to cultivate a literary cast of mind the materials for the satisfaction of which are not to be found in the bush. Partly through ignorance and partly by shirking the difficulties of a separate organisation the activities of vital worth in a forest life are ignored, and absolutely irrelevant subjects, absurdly inapplicable, industriously drilled into the innocent papooses. There is for example no divine educational virtue in needlework that it should shoulder out, in our school system, instruction in native cotton-spinning, an art much more useful to the inhabitant of the interior. By a similar perversity the East Indian child with no aptitude for the Occidental gamut, has vigorously pounded into him songs in a scale foreign to his ear, with words generally so ridiculously exotic that they bear for him neither meaning nor interest. You may succeed in changing his nice native dress for nasty European clothing, but you can't change his aural apparatus. The hideous cacophony of the mixed school singing lesson might convince even a tone-blind inspector.

The same criticism applies, so far as the words of the school songs go, to their use for the children of all races in the colony. That nemesis

of the talking faculty, verbalism, is in any case a baneful enough tendency in humanity without laying broad its foundations in child instruction. Rather should conservatism of words and care that to every word used there shall be a concrete image in the mind, be the ideal of pedagogy.

On the other hand you have in music an educative engine powerful in its influence on the negro, because there is in him naturally a facility in this respect and the corresponding lively interest in its exercise. The different expressions of the faces of children of the different races, when engaged in this exercise is an object lesson for the educationist, if he cares to take it.

The converse is true of drawing as an educational factor in respect of the race differences of which we are speaking. The Buck and East Indian child will here be found to be as prominent in facility as the negro child is lacking and, in their case, a sane educational system should look to the exercise of this natural bent for an effect analogous to that of music in the case of the negro.

Only at the cost of great loss can uniformity of treatment displace recognition of differing racial gifts and disabilities.

It is impossible, even if I had the sufficient knowledge of the various racial units which I do not claim, to go fully in this article through the items of instruction. One grave oversight in all school systems I may however in conclusion briefly refer to. While the senses of sight and hearing receive more or less haphazard training, and the exigencies of daily life look after the senses of taste and touch the olfactory sense, one of the most valuable channels of knowledge, is absolutely ignored. The first sign of grace in the framing of codes will appear in that which makes some provision for education of this faculty, so vitally important as an instrument of inquiry and prophylaxis. In those items of our school rolls least removed from primitive conditions of life, the greatest facility will naturally be found, and the education of the faculty will the more powerfully function in their mental development.

I recognise that these considerations all point to differentiation of standards and tests in respect of different types, a thing somewhat difficult, it may be, to organize. Under the new method of assessing grants, it is not however so impossible as under that which it has replaced and, anyhow, no amount of trouble or difficulty is an argument for the maintenance of what is irrational and subversive of those benefits for which the colony expends its grants.

Finally a word to the Board of Education. Its deliberations will be much more serviceable to the community when it turns its attention to questions fundamental in reasonable code building, and has less pre-occupation in finance of buildings, payment of teachers and control of a system which in the past has been pretty nearly useless from the Econo-

mic and Humanitarian point of view, in the present is no better, and in the future if it be not mended is likely to be worse, in proportion as we lag behind the amendment going on elsewhere.

[HYDCH] It is time enough to select your carpenter and arrange about his payment when you have got the plan of your house laid down, and the opposite order of events, common in colonial undertakings, does not recommend itself by any architectural evidence.

A FEW JOTTINGS OF MEMORIES EXTENDING OVER 41 YEARS IN BRITISH GUIANA.

By ULRIC R. WHITE.

My home was in London, but having been taken seriously ill in Liverpool, on regaining health my father said he would rather that I should not be so far away. I was destined to go still farther. On looking for something to do in the Great City, a friend of my father's asked if I would care to go abroad. Without hesitating at all, I said yes. I left London in a severe snowstorm in the good barque "Crystal," commanded by Captain Scott, a typical oldtime Scotsman, on March 20th, 1872, my fellow passenger being the late Mr. C. P. Barnes, who for many years and up to the time of his death was employed by Messrs. Booker Bros. & Co. We were coming out together to the late Mrs. Margaret Burns, a worthy lady merchant of the ancient town of New Amsterdam, Berbice, and mother-in-law of Mr. Justice Atkinson. Passing through the Bay of Biscay on Good Friday we had a very narrow escape of being wrecked. Owing to the vessel being new (it being her maiden trip) the strain on the rigging was so great, it became badly loosened so that the masts were very nearly unshipped. Not until the storm was passed though did we know of the greatness of our danger. In making taut all the shrouds, 4 or 5 feet of the slack had to be taken in—"All's well that ends well." The balance of the voyage was very enjoyable with the exception of a few days calm. After a run of 44 days, when we were just beginning to get short of food and water, we ran up the Berbice River under full sail, at mid-day on what appeared to us one of the most beautiful days possible, it being typically tropical. The view of New Amsterdam from the river certainly is far more beautiful than that of Georgetown. After landing, the comparison would be invidious.

After coming to anchor, good old Captain Scott took us ashore to what was to be our abode for a time. The cordial and hearty welcome given us by Mrs. Burns made us feel at home at once, giving us the assurance that it would be our own fault if we missed too much our over seas home. The results fully carried this out for in Mrs. Burns we found a warmhearted, motherly woman.

Just before arrival there had been a very severe drought, drinking water having to be brought from up the river. Our first evening indicated that it was coming to an end for on that occasion there was a deluge of hardbacks, that made it very difficult to take our dinner. We should have been very much alarmed but for the assurance of Mrs. Burns that they were harmless; all the same they were a very great nuisance. I have never seen them so numerous since, and in Georgetown they are by no means such a nuisance as in Berbice. Monday the rains set in,

seeming to us as if the flood gates of heaven had suddenly been sprung open; tropical rains being a novelty to us. The rainy season continued well into July. Coming out as we did without any preconceived ideas, Berbice being a Terra Incognita, everything was delightfully novel, especially the beautiful foliage and the different types of people and their costumes. Before leaving the subject of pests I must not forget the mosquito for which Berbice took the palm both in numbers and quality which I will illustrate by a story or two that I heard shortly after my arrival.

Up at Skeldon some men were inside a boiler repairing it, the mosquitoes being very numerous and strong the men clinched their stings on the inside, on which they flew away with the boiler, men and all and have never been seen since.

Another is that of two Captains. Americans of course, who on meeting in New Amsterdam were relating their experiences. The first said he passed through a black cloud having cleared which, he found every stitch of canvas had disappeared. "Oh!" said the other, "that accounts for it; I passed through that same cloud and every mosquito had on canvas breeches."

Yet one more. Two sailors sleeping ashore, finding the mosquitoes troublesome drew the sheets over their heads. One on looking out said, "I say, Bill, it is of no use for they for looking for us with lanterns" He had seen some fire flies.

Another thing that strikes the newcomer, is the whistling frogs. A friend (also a new comer) for whom we were waiting got very much annoyed, repeating that he was coming. Hearing the frogs he thought we were whistling for him.

Having a difference of opinion with Mr. Burns, one of the quaintest little Irishmen that I have ever met, though as goodhearted as you make them, I left Mrs. Burns and joined Mr. Wreford, father of Mr. Wreford, F.R., a merchant in Berbice, who was manager of Mr. Bridges' Grocery & Hardware Store. Later I took charge of the Wharf and Saw-pits. Mr. Bridges was an Estate Proprietor and Agent, later on Administrator General. My fellow passenger, the late Mr. C. P. Barnes, having left to join the good old firm of Playfair & Co., I soon followed. He soon after left there to go into Booker Bros. & Co.'s Office, where he remained until he died. I remained until the firm dissolved partnership with Mr. P. P. Fairbairn. Some of my happiest days were spent under two of the most kind and upright men one could wish to meet with. viz. :—Messrs. Donald Currie and P. P. Fairbairn, types of employers not met with to-day, I am sorry to say. In those days we lived over the store and were treated by Mrs. Currie and Mrs. Fairbairn, whichever was in residence at the time, as if we were sons. After dinner each one of us in rotation had to read a chapter of the Bible and also a prayer, evening by evening. Unless we had special permission, we had to be in by 10 o'clock. If they had friends of an evening we were expected to be present. At one end of the

building was a billiard and sitting room and at the other end, the resident partner's quarters.

There were 6 or 8 of us Home hands, amongst them being A. K. F. Duncan, James Stuart and Peter Stewart. When Mr. Currie left the firm to start his own business near the market, known as Donald Currie & Co., he took the two Stuarts with him. A. K. F. Duncan left and later on joined Smith Bros. & Co. Messrs. Smith & Gibson, who made Smith Bros. & Co., were also with Playfair & Co., but before my time, commencing business where Donald Currie & Co. is now. They had to give way for Mr. Currie to open his own business, in course of time acquiring the premises and business for themselves.

In 1877 I went Home to get married. During my absence Mr. Fairbairn lost his brother, consequently shortly after my return, I was made Chief Clerk of the main business. Mr. Duncan having left, it was thought advisable to close down the branch known as the Granite Warehouse, now the Bon Marché, of which I was in charge, it being too near the chief store. Later on, when Mr. Fairbairn severed his connection with the firm and it was necessary to cut down expenses, I had to find other quarters also. In the following year, and up to the present, a peculiar degree of unfavourable circumstances seemed to dog my footsteps.

In the earlier years of my experience several firms, amongst them being Paisley, Templeton & Co., Playfair & Co., and Booker Bros. & Co., boarded their Home hands and it can be well imagined what lively rollicking times there must have been, with so many hale, hearty young men about the streets after dinner. In those days it was a rare exception to meet non-drinkers, even those who came out as such very soon followed the custom, generally having a pretty hard time of it until they fell in line; so that what with natural and unnatural spirits, it can easily be seen what would happen. Then Mr. Bobby (who at that time was a policeman, not a semi-military creature) very discreetly was *non est* when a band of these young sparks made their appearance, and if by any chance at all, one of them, more venturesome than usual did show up, he was promptly turned upside down. No Police Court case followed next day.

Mr. Bobby in his generation was by far too wise, knowing full well which side his bread would be buttered on. As for stray hand-carts, etc., seen at the roadside after dark, it was deemed that they needed a washing, so forthwith into a trench they went and woe betide the owner, if he dared to protest for in he went also a sadder but wiser man. All this has passed away and now young men either club together and go into diggings or into one of the now numerous Boarding Houses. So changes take place, the old giving away to the new, not always, one is very much inclined to think, for the better. I could many a tale unfold of eccentricities of employes, clerks, etc. It may be as well, however, to drop the curtain on them with one exception. History always repeat itself, and just

as we are having dull times at present so it was in previous years. Such being the case on one occasion. Mr. Irving having to go to Venezuela to collect accounts. (it has been said with a revolver in his pocket) his partner, Mr. McArthur, closed the store, telling the clerks to go home for a week. Mr. Irving, returning before he was expected, had to scour the country to get back his hands and so their holiday was spoilt.

One great and very useful institution, when a fellow was going on his well earned holiday, was the raffle. Then the clans right royally gathered together from all quarters, and when the serious part of the affair was over, singing, etc., took place until the wee hours of the morning. I never remember seeing any serious unpleasantness at any of these functions. Jokes against each other always were taken in good part. Those raffles were really of great benefit to many a young fellow about to return to his native land and the call was always responded to cheerfully and willingly, there being no difficulty in getting paid for the chances, which generally were \$5 or \$10, the motto being "To-day for you, to-morrow for me."

In the seventies the arrival of steamers was quite an event. Indeed it was a fine sight to see the Harbour full of sailing vessels, some of them, especially those consigned to Thos. Daniel & Co., remaining very often for months waiting on a cargo of sugar. We miss too that fine fleet of ships that used to come to Sandbach Parker & Co., and also those to A. W. Perot & Co., and, above all, that old veteran Captain White. At that time the Y.M.C.A. used to hold services each Sunday afternoon on board one of the vessels, going off in their own boat, which they had acquired from the Police Department, manning it with their own members, one of whom addressed the sailors, when unable to procure a clergyman; sending off on Saturday their Bethel Flag. Now it is nearly all steamers, that rush in and out with feverish haste as if trying to race good old Father Time. One wonders what next.

The Mayors of the City that I have known all, without exception, have been worthy holders of their office. I may be pardoned for referring to a few:—

Messrs. Drysdale, whose memory is kept green by the naming of a miserable little alley after him; Forshaw, by a clock opposite the Royal Agricultural and Reading Rooms; and Murdoch. These have passed away but neither they nor their work have been forgotten. The others too have done yeomen service, each one in his own turn initiating some scheme for improvement, and they have been backed up ably by their late Town Superintendent, Mr. Luke M. Hill, and by the present holder of the office, Mr. W. F. Laurie Thomas. Those of us who go about the City and in and out of every street cannot but be struck by the steady progress that has been and is still going on. One serious blunder has been made, in filling up these trenches which gave Georgetown the name of the Venice of these regions. They were unsightly sometimes because they were neglected, but they might have been made beauty spots and still have

remained a benefit to the City, their expanse of water, in the dry season, adding the necessary moisture to the surroundings by evaporation. Mosquitoes would have been drawn to them and destroyed by the fishes in the trenches. Thomas and Carmichael streets are not filled up yet, why not let them be improved and kept full of fresh water? Barring this blot, the rapidity of the improvement makes one wonder, what next. Queenstown, Bourda and the Botanic Gardens I have seen evolved out of wild bush. The two first by Mr. L. M. Hill, and the latter by the late Mr. John Brummel, then Sheriff of Georgetown, to whom a memorial has been erected in the shape of a bandstand in the Gardens. But absolutely nothing has been done to mark the good work done by Mr. L. M. Hill. Must we wait until he passes to the great majority? That fine old gentleman Mr. Jacobus Hill, Town Clerk, still looks down on us when we enter the City Hall, by mistake called the Town Hall, an oil painting having been placed there as a memorial. That grand old Planter, William Russel, is also remembered by a bust opposite the steamer stelling, on account of his success in supplying Georgetown with water. But for him what should we have done during the longest drought ever known? Mr. P. P. Fairbairn, one of the most upright gentlemen the Colony has ever known, has been honoured by a stained glass window in St. Andrew's Church. I remember when the Town Council Offices were over a little shop where the B.G. Mutual Building is now. The new Town Hall is a landmark of local talent, the architect being the late Rev. Father Scoles, and of local workmanship. It is a building to be proud of, but unfortunately it is by far too small at the present time, another illustration of how we are progressing. The B.G. Bank has always been the fine building it still is and of really good workmanship. The Colonial Bank was in a pokey little place until replaced by the present commodious building.

In former days we had no tram cars and very few decent cabs, until Messrs. Stewart (of Playfair & Co.) and Russell (of Booker Bros.) put improved ones on the road, even importing two Hansom cabs. These were found to be too heavy and cumbersome, so were soon taken off. I wonder what has become of them? Still we got along alright, and the old gives way to the new, for we must march with the time, it being a case of Rush! Rush! Rush! in these days, everything having to be done at fever heat. Just a few shabby cabs; then mule driven trams and now electric cars, to be followed by aerial flights. When the much patronized trams first made their appearance it was said that it meant the death-knell of the cabs, but it has not been so, for as each improved method of travels has taken place, the numbers of cabs has increased.

For a great number of years there was little or no public spirit in this Colony, the late good old Mr. Bascom, of Cove and John, being one of the first in the legislature who seemed to see what was coming. The Planters then were the dominant power. But this is a dangerous question to touch on—it being almost impossible to make them see that one can be with them up to the hilt and yet see some of their shortcomings. I

will leave it to those who come later on to say whether it has been for the Colony's best interest that it was so or not. One thing I must add and that is, it is a pity the Colony does not seem able to exceed its 100,000 tons a year. Would it could be a million?

I am proud to say that I did my little in helping to bury that antiquated, but in its day very useful, old lady, the College of Keizers and to bring about a greater measure of public spirit, let us hope a healthy one. With Messrs. Straughn, Hinds and others, I took part in the early days of the Reform movement, Messrs. Straughn, Hinds and myself being a deputation who waited on Mr. Watt, M.P., when on a visit to Sir Henry Turner Irving.

Of Governors my experience has been that we have had good, bad, and indifferent—very few good or bad, but more indifferent. Amongst the first class, towering head and shoulders above them were Sir Henry Irving, Sir Alexander Swettenham and, we hope, one who will top the list, our present Governor—each of these being imbued with a desire in every way to further the *real* interests of the Colony. Lord Gormanston was also a good man. The one great evil this Colony has suffered from has been the sending of men here merely to qualify for their pensions, their principal occupation seeming to be how to increase the official staff and swell the Pension list.

Sir Henry Turner Irving was the first Governor to tackle the Gold Industry with all its possibilities, but it has by no means yet been made the most of, owing to many preventable causes, among them being in some cases the putting of unsuitable men as gold officers and of allowing alcohol to be sold in the bush. Another blunder has been the encouragement of "Pork-knockers" under existing circumstances. I wish it to be clearly understood that I am not against "Pork-knockers" if under proper and suitable control or under certain conditions. I have not time in this paper to explain my meaning more fully as it would be a subject sufficient in itself to form a paper similar to this. But to return to our Governors, Sir Alexander Swettenham, who followed Sir Henry Irving, desired to open up the Hinterland, showing full well what he would have done if he had not been called away by far too soon; yet some of his work still seems to live and is likely to be carried on to a successful issue by Sir Walter Egerton, if we, in our usual apathetic, pessimistic grumbling spirit, do not hamper him too much.

In referring to these three especially, I do not for one moment mean to say that *all* the others have been of no use, by no means, some of them good worthy old gentlemen, as I have already said, unfortunately seeming to be imbued with the one idea of increasing as much as possible the Civil List until it has become a huge Octopus, growing and growing and growing, until one wonders where it will end. It would not matter if the welfare of the Colony increased in the same ratio. There can be little doubt that with judicious amalgamation of some offices and better and more faithful work of ALL officers though undoubtedly there are some

of them, who really do work hard and conscientiously, and with a trifle longer hours, the Civil List could be easily reduced. Many Public Officers have really so little to do that they find time hanging heavy on their hands, lack of sufficient work making them so ill—that they go on long leave. Some years ago in the eighties I think, I tried hard to get the early closing movement started, but could not get my fellow clerks interested, each seeming to be afraid of his own shadow. I am thankful to see that the seed then sown has at last taken firm root.

During my forty-one years I have seen a vast army pass on before, some have crossed the borders, to the great unknown (the larger number) some have gone away, perhaps for their own good, but in some cases for the Colony's good. Who can tell? By the way the latter class unwittingly often give the Colony a bad name as naturally, if wrecked in health and they were asked, "Oh where have you come from" they would reply "Oh that horrid hole British Guiana," carefully omitting to mention why to them it was horrid. A healthy man is never asked where he comes from and so poor Guiana finds it difficult to make it believed that it is by no means as bad as it is painted, making it imperative that we should in season and out of season judiciously and profusely advertise ourselves.

Amongst the great army of those who had passed away in New Amsterdam are: The Rev. Duff (father of our late Immigration Agent General) a fine old stately typical Scotsman; the Rev. Thos. Dalgleish, of the London Missionary Society, who was honoured and revered by all classes and denominations. Amongst those whom he trained and left behind and who is still with us is Dr. London. Old Britton, proprietor of the Strand Hotel, as fine a type of a black gentleman as one could wish to know, whom to see on his great white horse and with his wide Panama Hat was to make one think he was some great General. Drs. Hackett, Crammer (father-in-law of the late Dr. Wallbridge), Altham and Alexander were of the good old types of doctors. The last is said to have had a Pepper Pot that had been kept going for over 30 years; its wire mesh cover being fastened with a Padlock, the key of which the good old doctor kept in his pocket. Then there was Henry Katz Davson, the first native of British Guiana to be honoured by being knighted, the worthy son of a worthy father, whose sons (sons of the soil) must feel proud that their father was so honoured and in remembering how their grandfather built up such a large business.

I must not forget Mrs. Burns, familiarly known as "Maggie Burns" as good hearted and as kind a lady as one could wish to know, who by her shrewd business ability, built up a large business and became in her day the largest property owner in New Amsterdam. As an illustration of her large heartedness, when at one time the butchers raised the price of beef, she, having a cattle farm up the Corentyne Coast, opened a butcher's stall in the market and undersold, only withdrawing when they gave way. She had none of that false pride too much seen to-day. I have

myself seen her returning from the market carrying a bunch of plantains. Of course there were many more such as Silvanus Wreford, Robert Samuels, etc., but I must pass on to some of the City men.

Bishop Austin from all points of view tops the list, closely followed by the two Roman Catholic Bishops, both fine men, Archdeacons Wyatt, Castell, Austin and Farrar, Revds. Slater, Glasgow, Foreman Pottegrow, etc., etc., each of them worthy of more notice than I am able to give them. James Stewart, Peter Stewart, P. P. Fairbairn, James Thompson, The Bookers, Drs. Manget, Cameron (who's panacea for all ills, especially for Booker's clerks was magnesia mixture), Hutson, Wallbridge, etc., and innumerable others equally worthy of notice. These memoirs would be incomplete if I were to leave out the late James Veacock, the greatest Shakesporean scholar that this Colony has even known, who could repeat almost all his plays without a book, it being a treat to hear him suitably delineate each character. His histrionic ability and elocutionary powers were of a very high order. He, with a few others, helped to build up and keep alive for several years the late Demerara Dramatic Club, bringing out all the best talent, it being no uncommon thing to hear it said that such and such a play was better produced and staged than when done by some travelling company. Nothing was too ambitious for the D.D.C. to put on, as they spared no expense to get perfection; but for petty jealousies, the usual thing with amateurs, it might still have been alive.

Music was represented by the talented Mr. Colbeck, who was too advanced for his time, still his good work is bearing good fruit to-day. He was ably assisted by a great number of gentlemen amongst them being the late Rev. W. G. Austin (at one time Inspector of Schools).

Mr. Cahauc, known as Charley Cahauc, built the Philharmonic Hall, a Bijou Theatre, he always bemoaned the lack of interest taken in real talent as compared with that manifested in dancing dogs or the like. A great deal could be said of this old gentleman and *all* to his credit. These are but a very few of those I have known.

I might speak of Judges, Magistrates, Lawyers, etc., etc., etc. For instance Chief Justice O'Malley who on one occasion when walking through Queenstown Ward saw some shirt tail boys playing at cricket, quarrelling. When he interfered the boys, not knowing who he was, used by no means polished language: telling him to mind his own business, which he promptly did, saying it served him right. Magistrate Seon, who on one occasion was summoned by his cook for abusing her went into the dock, pleaded guilty, returned to the Bench, gave himself a lecture, fined himself and went down stairs and paid it.

Of Lawyers there was "Old Imlach," as good and as honest a Lawyer as it is possible to know. On one occasion he made a bet with some adies that he would walk to business with a "Check a bit" on his head, which he carried out, for I saw it myself, holding his head as erect as possible and looking neither to the right nor the left. He suitably re-

turned any remarks to those who on passing made reference to him. His quaint and by no means *inaudible* inuendoes when in Court, as Crown Solicitor, of course were not heard by the Bench. Lynch, Dargan, Cunningham and De Souza were all men of mark, the last being a martyr to his convictions, meeting with a very sad end, not being allowed to follow his wife's body to the burial ground, she having died when he was in prison. This so preyed on his mind that not being strong he died before he accomplished what he attempted. One more of them I must not forget namely that cleverest of all our Lawyers in Dutch Law. Dr. Belmonte. He was a bit excitable and emphatic in trying to drive home his points, often standing near the Judge's desk. On one occasion, having failed to carry his point by all other sources, he took up his Voet (pronounced foot) shaking it before the Judge, said he would give him his "foot." receiving the reply, it is said. "If you do I will give you my fist."

Going over a period of 41 years, of course I am aware that there are innumerable names that I have left out, and also many incidents, humorous, pathetic and tragic that I might have referred to, such as the two riots, the terrible boating accidents, etc., etc., my only apology being that I have already made this paper by far too long. I claim no literary ability feeling that my attempt at writing these memoirs is very crude and very incomplete. Tracking up old memories has made me somewhat sad, for there are very few left of those whom I knew as young men. It makes one feel lonely, to remember how many have gone beyond recall while I am still left. Why?

Of course in a subject like this so much could be said and so much is better left unsaid, that I have felt it very difficult indeed to put my thoughts (without any references before me) together in such a way as to give pleasure without offence: it being merely a few disjointed jottings of a few memories extending over a period of 41 years in a land of promise which bids fair some day (let us hope soon) to be a land literally flowing with milk and honey.

I must before closing pay a high tribute to the Colony, as being by no means one of the worst places on earth, believing that for those who take care of themselves, taking plenty of exercise and leaving alcohol severely alone, good health will follow. Coming out here 41 years ago in very weak health and not having been away from the Colony for 36 years and having kept undoubtedly good health, I speak volumes for the Colony. I often say that the Government ought to subsidize me to demonstrate abroad that this is really a good colony to live in. I still hope to live long enough to travel to the frontier by Railway, the sooner this is built irrespective of whether Brazilians will use it or not, the sooner will British Guiana become one of the brightest jewels in the British possessions.

A NEW SCHOOL.

By ETHEL M. MINETT.

At a time when our high rate of infant mortality, and the possible remedies suggested, are receiving attention in all minds interested in the health of our colony, it may be of interest to review some of the methods in use in other countries for the improvement of infant welfare.

Each country has its own special difficulties, in climatic or industrial conditions, the degree of civilisation and education of its people, and its capacity for support of increased population, but taking the rate of infant mortality in various European countries, it is found to be lowest in purely agricultural countries, such as Norway, Sweden, and Denmark, higher in industrial countries such as France and Austria-Hungary, and highest in Russia, where the great mass of the peasantry is still in an uneducated and poverty-stricken condition.

Jamaica and Ceylon, with hot climates, come high in the list, while Australasia has, possibly by means of its energetic legislation, succeeded in bringing its infant death-rate to a level equalled only by the purely residential or agricultural centres of England—a rate of only 60 to 90 deaths per 1,000 births, while we in British Guiana lose yearly about 230 to 280 of every 1,000 born.

If statistics of the causes of death in infants of under one year be noted, the same two causes will be found to head the list in almost every case—first, diseases of the alimentary tract, and second, diseases of the respiratory tract. This means that neglect or ignorance of proper feeding and proper protection from changes of temperature are responsible for by far the greater proportion of infant deaths. This applies not only to European countries, but even in higher degree to tropical countries, where the epidemic diseases peculiar to early years of life, such as scarlet fever, diphtheria, whooping cough, and measles, are almost negligible in their fatal effects.

These, then, are the chief evils against which a campaign must be carried out.

Infant welfare schemes fall usually under three heads :

- (1) The forcible removal of causes or conditions leading to these evils.
- (2) The prevention or amelioration of the results of these causes or conditions.
- (3) The education of public opinion, to lead in time to the voluntary prevention of these evils, and to the removal of their causes.

Where possible, the first is the best and most scientific method, but force can be applied only by Governments, and legislation does not begin and end with the passing of laws; a constant watch must be kept upon a population to punish the evasions of those laws, and this necessitates an expensive staff of visitors, overseers, inspectors, and clerks, which no country is likely to be able to maintain for one branch of health reform only.

Legislation in other countries has been directed to the improvement of the condition of mothers working in factories; the registration and inspection of persons taking for hire the care of infants; the care of illegitimate children; and the compulsory notification of births.

In most countries factory work is debarred to mothers within a month before or after confinement, but by recent inquiries among the working women of England it has been found that the enforced rest has been coupled with semi-starvation from lack of wages at the time most needed, and that the infant mortality has not decreased to the extent that was hoped for by those framing the laws.

Spain has a special provision for factory workers nursing their children, of two half-hours a day off work, with no wage-deduction, to enable the infants to be naturally fed; and in many Parisian and Roman factories a small crèche forms part of the women's buildings, allowing the working mothers to feed their children on the premises.

In Australia the inspection of persons taking infants to nurse for hire is extremely stringent, licences being issued, and periodical inspections made to see that the infant is receiving the care and attention necessary—a form of legislation that might with great advantage be brought into force here, when the number of children definitely or indefinitely “boarded out” is enormous—and the choice of persons, responsible for the upbringing of the children, of the most haphazard description. England has been behind hand in this type of infant care, for only so late as 1910 was the notification of the receiving of infants for hire made compulsory.

In Hungary, the “children of the State,” mostly illegitimate, are provided for in temporary ‘asiles’ from which they are boarded out either with their own mother or foster-parents, and when older, trained for agriculture, trades, or domestic service, the State finding the benefit in the lower death-rate and subsequent increase in healthy population.

Victoria assumes care of boarded-out children. If a month's payments to the foster-mother fall in arrears the children then pass into the charge of the State Neglected Children's Department.

Roumania has perhaps the best scheme for the care of fatherless children, started by private enterprise, now aided by grants from Local Authorities. This is an institution where the mothers are received, with the infants—an improvement upon most “Rescue Homes” where the

children are regarded as encumbrances, and too often left to the care of incompetent persons—and trained in various occupations, at the same time having the care of their own children. By the time the child is two years old, the mother is ready for some wage-earning occupation, and the child has had a good healthy start in life.

In Leipzig a system of voluntary visiting of these illegitimate children, aided by the local authorities, is successful in compelling 90 per cent of the fathers to contribute to the upkeep of the children.

Possibly with the example of other countries before us, British Guiana may one day devise some means of dealing with our great problems of the care of illegitimate children, the deaths of whom form about 70% of our total infant mortality.

Legislation for the supply of pure milk for children is now in force in most countries, and the cry went up some years ago for municipal or charitable milk depôts for infants, whereby a pure supply could be assured. Experience of these in England has shown that if thoroughly carried out, with sterilisation and individual supply, this is a most expensive scheme, and in most towns it is now realised that legislation for the improvement of the whole milk supply, strictly enforced, is of more general value.

The provision of a well-known pure supply has been found to discourage breast-feeding, ignorant mothers believing that what is municipal must be best, and therefore hastening to wean their infants in order that they may reap the benefits of the "pure supply." This was found in St. Pancras, the pioneer district in schemes for infant welfare, and the return of the authorities to insistence on breast-feeding met with more success in decreasing the mortality than the best organised centres for milk supply.

Dr. Buchan, the Medical Officer of Health of St. Helens, the first town in England to institute a milk depôt, recently insisted, at a conference on Health Promoting Institutions, that "Infant Milk Depôts, like fever hospitals, must work solely for their own extinction." They are to be regarded merely as a temporary measure, and it is questionable whether their success warrants the expenditure of the amount of money necessary for their upkeep.

St. Pancras, under the guidance of the late Dr. Sykes, was the first to start a "School for Mothers," a scheme which, from its inexpensive beginnings, and success in all districts where the example of St. Pancras has been followed (over 80 of the "Schools" are at present working in Great Britain), seems to be of most use in the education of the mothers, which in time we may hope "will lead to the voluntary prevention of these evils, and to the removal of their causes."

It was early recognised that the assistance of milk depôts, lying-in charities, maternity insurances, and the like, while helping those immediately concerned, yet had no appreciable influence on the general infant mortality, but that some educational scheme would be necessary to reach the greater bulk of the women, mothers present and future of the nation.

France, ever foremost in realising the value of increased healthy population, began in 1906 her "Consultations de Nourissons," first in connection with the maternity hospitals, later as independent undertakings.

To these were brought infants and mothers who had left the hospitals, and records were kept of the infants' progress, regular weighing being a special feature, while the mothers were given advice as to simple rules of health and encouraged to nurse their babies. The spirit of competition was fostered by prizes for well-cared-for babies, and directions given as to necessity for attendance at hospital or other medical treatment if signs of disease were discovered.

On these "Consultations" the "School for Mothers" was based, infant consultations were held once a week, and the attendance of mothers increased gradually, most of them finding that a little help in the choice of food, bottles, and clothing, meant a great saving in expense, and a great improvement in health of both parent and child.

In 1912 the fifth annual report of the St. Pancras "School" gives 330 mothers in regular attendance, and 1,550 visits had been paid during the year, while two more schools have been opened in or near the district to meet the needs of the mothers.

The undertaking is not in any sense a charity, though charitable branches, such as free meal restaurants, prizes for baby shows, cookery and dressmaking classes, etc., have been gradually added—the mothers are given advice only, first at the school, and later by visitors attached to the school, the main object being to educate the mothers in infant care, while leaving the responsibility for the health of their children wholly in the hands of the parents.

In connection with the School there is a Mothers' Provident Fund, where mothers deposit small sums per week or per month during pregnancy, the total being used for the benefit of the child later on. Simple teaching is given to expectant mothers, and there is no doubt that the scheme is an unqualified success.

It may be said that the conditions of infant life here are entirely different to those of an overcrowded district of London, but the main factor in the waste of infant life is the same—ignorance. Factory legislation we do not need—milk depôts we cannot at present afford—but education we must have if we are to supply the colony with healthy citizens in the next generation.

The School for Mothers, begun here as a branch of the Society for the Protection of Children, is but in its experimental stage, time alone will show whether it will succeed here as the parent institutions have done in England, but it is at least an attempt to help the mothers in the training of healthy children, and to reach the ideal set by the English Board of Education in its recent Memorandum. "If girls and women could be taught how to take care of infants, we might hope to diminish not only the high rate of infant mortality, but also the large amount of unnecessary ill-health and suffering caused by neglect in infancy and childhood."

DEVELOPMENT AND TAXATION.

The important question "Can the colony be developed without increased taxation" was discussed at the regular meeting of the Royal Agricultural and Commercial Society on 23rd July. His Excellency the Governor, Sir Walter Egerton, K.C.M.G., presided after the preliminary business had been completed.

The acting President of the Society, the Hon. J. J. Nunan, opened the discussion, his views on the subject being as follows:—

PRESIDENT'S ADDRESS.

Your Excellency, Ladies and Gentlemen:—I think the Society can congratulate itself on the presence of Your Excellency this afternoon. The subject of this discussion was arranged by the President before he was compelled to leave the colony on business, and on accepting the acting presidency I did not feel at liberty to alter it, and indeed saw no reason why I should do so. Some friendly remark appears to have been occasioned by the announcement that a Government officer would be in the chair, but the founder of this Society in 1836, Dr. Campbell, was a Government officer, and so are some of our most active directors. It will be a bad day for this or any other colony, when officials cease to take an interest in public matters, either regarding themselves as pariahs and so beneath the privileges of ordinary citizens, or else like the gods of the Epicureans lifted above all worldly cares to an atmosphere where no sound of human sorrow mounts to mar their sacred, everlasting calm. There is a very wise regulation which prevents them from taking part in political discussions or indulging in public criticism on matters of administration, but the very same regulation endorses their right as British citizens to deal with matters of public interest. In so doing they will be supposed to act with discretion and in no sense can their action bind the Government. I do not know of any matter of such absorbing public interest as the future development of this great, this ancient, this side-tracked colony, nor any time more urgent than the present, for the careful consideration of its problems by all classes of its citizens. We are face to face with a falling sugar and balata market and the collapse of the New Colonial Company does not increase the prestige of our staple as a form of investment. Nothing much can be hoped from the rice crop on the Corentyne and the West Coast of Berbice owing to the effects of the drought on the Coast savannahs. Our timber possibilities are still in the region of nebular hypothesis for the hope of seeing a market test applied to them on the largest scale which so many of us entertained when I last addressed you in October has vanished like the delusive hues of a rainbow. A considerable sum of money has been circulated in Water street owing to the gold rush to Pigeon Island, but only at some risk to the labour supply for the coming sugar crop. Finally the East Indian indenture system which has given us two-fifths of our population can no longer be

regarded as a certain aid for the colonization of the colony. We are face to face with new conditions in India and elsewhere, and may at very short notice have to accommodate ourselves to the task of solving our labour problems on other lines.

Cassandra was not a popular prophetess especially in her own country and we are all alive to the truth of the saying that you cannot argue with a prophet, you can only disbelieve him. Still without prophesying or pulling too long a face, it must be clear that the immediate outlook is not as cheerful as we should like. It only remains to consider whether we shall sit with folded arms and murmur "Kismet" or whether like our predecessors in this colony, like our fellow citizens all over the British Empire, we shall put our trust in God and boldly go forth to face the difficulty rather than stay at home and succumb to it.

TALK WITHOUT ACTION.

If the development of this colony could have been brought about by discussion and advice it would be one of the most progressive parts of the world. But the talk goes on, good intentions are formed and nothing at all comes of it. Year after year we tread the same weary round, hope deferred making the heart sick. The climate is conducive to a life of contemplation. Genuine capitalists seldom visit us and leave our possibilities to the chances of the adventurer or the adventurous. I am inclined to think they treat us as the Rajah of the musical comedy treated another slumberous land:—

"Peace, peace, leave them in peace,
For the weak must be ruled by the strong
And the axe and the knife
Are no longer at strife
In the beautiful Valley of Bhong."

There is a danger of our drugging ourselves with advice and hopes without taking the advice or translating the hopes into concrete realities, and I doubt whether anybody whose advice is neglected will make the ineffectual protest of Ahitophel to call attention to that neglect. My recollection is that Ahitophel, finding his advice flouted, saddled his ass and went away unto his own country and put his house in order and hanged himself and was buried with his fathers. My scriptural information does not reach so far as knowing what happened to Hushai the Archite whose false advice was more pleasing to Absalom. King David no doubt considered whether he should hang him or make him a captain in Israel. Without irreverence I trust he hanged him.

But lest I be tempted myself to imitate Ahitophel and, as I have no desire to share either the punishment or the reward of Hushai the Archite, I intend not to occupy your time by giving any advice at all. I will myself set out the subject of discussion, mention a few facts, and formally put before you the opinions of people who have a better right to be heard than I.

THREE WAYS OF DEVELOPMENT.

The question for discussion is whether the colony can be developed without imposing fresh burdens of taxation upon the citizens. It seems that this is only possible in one or all of three ways, first, by retrenchment and the devotion of our economies to opening up the country, secondly, by formulating and carrying out schemes remunerative from the outset, and thirdly, by securing the introduction of outside capital to carry out independently a constructive policy of which we should reap the benefit.

I use retrenchment in the widest sense. In its narrow sense it is a very popular policy at all times and a favourite electioncatchery. Those who use it are seldom able to point out methods where it can be applied without a corresponding loss of efficiency. Rough surgery can be practised by anybody who has a butcher knife but the difficulty is to prevent the patient from being mortally wounded or bleeding to death. Even when the knife is scientifically applied as had to be done during the Swettenham-Ashmore regime to save the land from bankruptcy, much may be pared off which either can never be replaced or which has to be built up again piecemeal when the delusory character of the economy is realised. In this regard I think I need only refer to the abolition of the Administrator General's Office. It has had to be reconstructed step by step and what this colony has lost in revenue from its abolition owing to the absence of any proper supervision of the administration of estates must amount to a very considerable sum. The abolition of the flourishing Government Savings Bank the oldest British institution of its kind is another instance. However, there is no doubt that our legal equipment at all events is redundant and overweighted for present requirements. I am glad to say that His Excellency has approved of my proposals for abolishing the Limited Jurisdiction and, while providing for an independent local Appeal Court, for enabling the bench to be reduced by one Judge. I am glad to say too that Their Honours individually have expressed themselves in sympathy with such a scheme. It will give each Judge the full powers of a Supreme Court Judge and do away with the anomaly of three Judges being necessary for all cases affecting sums over \$2,500. Other proposals for reducing the cost and number of the legal branch of the administration are being considered by His Excellency.

This is an instance of retrenchment in the narrower sense, but there is also an economy to be practised in the health and fitness of the human machine, in the lives of men, and especially in the lives of babes and sucklings. It is a relief to think that our splendid public health regulations are being put into force with a system and determination which has never been surpassed before, under the inspiring influence of His Excellency and Surgeon General Godfrey and with the scientific knowledge which Drs. Wise, Rowland, Ozzard, Ferguson, Minett and Wishart have been able to furnish. In connection with this work of public health it would be unfair to overlook the name of Dr. Law who, with our indefatigable Surgeon General, kept the flag flying in spite of the hostility of the uneducated and the indifference of those who ought to have known better. The results

are seen already in the returns of births and deaths. In the past no settled colony has been more lavish and reckless in its expenditure of flesh and blood. While East Indians and Barbadians have kept pouring in our population has gone up only some five per cent. in twenty years while Trinidad which has only one forty-fifth of our area has increased fifty per cent. in the same time and has now beaten us in the race for population. Yet people complain of taxation here which is less than ten dollars per head and raised almost wholly in Customs duties, while in Trinidad it is about sixteen dollars per head and that island has a much larger public debt. The figures of expenditure are £959,000 as against our £588,000. Our public debt on analysis is found to be a mere trifle and would be borne as lightly as a flower if it were ten times that amount, provided always that the colony were clearly on the up grade. As regards the money value of human life there is an interesting article in the '*Transactions of the Society of Tropical Medicine and Hygiene*' for May by Dr. Thomson in which the subject is dealt with. The capital value of a human life, according to the hygienists, varies according to age depending as it does on the two factors of earning capacity and expectancy of life. How much does a person earn and how long will he live? The answers will enable us to state how much he is worth. If this estimate of the money value of a human being to his family or to society be applied to any considerable population, says the writer, the figures reach enormous proportions and if we estimate the money loss which results from premature death or disability from disease or accident the amounts are much greater. Expenditure here in preventing the spread of malaria or tuberculosis or typhoid or in stopping the modern massacre of the innocents is not alone retrenchment in its most statesmanlike form but is a great work of constructive policy.

There is another field where this policy of retrenchment can be effectively applied and here I can speak with some technical knowledge and in much of what I say I believe I have the much-abused legal profession with me. I refer to the law and the practice of the law. A great deal of intellectual force and a great deal of time and money are wasted in this colony owing to the uncertainties and the mediæval or *cinque cento* accompaniments of both the one and the other. Capital will always look askance at a place where the law is uncertain as it has no love of law-suits and English investors at all events shrink aghast when told that a transport is not a document of title in any English sense, and that contract and sale of goods have different meanings in our law from the English conception of them or that nothing but the praiseworthy ingenuity of the local Judges can give them anything like the same significance. Fortunately the Common Law Commission has got through a great part of its labour and has already reached the report stage.

Although I do not wish to anticipate its findings, as its chairman I may say that the result, if accepted by the Executive and by the Colonial

Office, should be to take the commercial law at all events out of the region of nebular hypothesis.

I personally trust the larger hope that we shall codify what we require and abandon the rest of our present colonial law. We are now on the eve of the third reading of a Company and Insolvency Law, and a Sale of Goods Bill, Bills of Sale Bill and other useful Bills on English lines (where possible identical with the English legislation) have been already drafted. I hope married persons will also get the rights in intestacy of which they have been deprived and which they have suffered for some years in patience or in ignorance of their fate. The only place where they are treated as badly by the law is Quebec and even there a movement for reform has arisen. If an English girl arrives in the colony and marries and has the misfortune to lose her husband she will probably not be consoled for his loss by finding that she may be entirely a stranger to his estate and be penniless even if he were that *rarissima avis* a British Guiana millionaire.

As regards the process of ascertaining what the law is and the procedure for giving effect to it there is also some room for reform and economy.

In keeping up the distinction of the two branches of the legal profession—Barristers and Solicitors—we are indulging in a luxury, which some of the largest colonies have not been able to afford. It is a well-known fact that our Barristers are compelled by local conditions to do Solicitor's work and that it has been found impossible to compel the strict observance of the etiquette prescribed at Home. This practice received some recognition in the Legal Practitioners Ordinance of 1897, which provided that a Barrister acting as a Solicitor shall, in so far as he practises, be deemed to be a Solicitor within the meaning of the section and consequently an officer of the Court. Any question as to what constitutes practising as a Solicitor is to be decided by rules of Court to be made for determining what constitutes such practice. Such rules were made in 1908 and everybody has forgotten all about them.

It would be much more satisfactory to have the position of legal practitioners as constituted by local practice frankly and openly recognized and one general body of advocates formed as in some other British possessions with all the rights of general practitioners. It would lead to a considerable reduction of the cost of legal proceedings, although no doubt a division of Court and office work would be inevitable in important matters. One member of the firm would do the office or purely Solicitor's work and the other would do the Court work either alone or assisted by his partner or by some other member of the united profession.

In the Leeward Islands by an Act of 1880 the right of Barristers to practise as Solicitors is expressly authorised but they are thereupon subject to all the liabilities which attach by law to a Solicitor. I see no difficulty in the way of the adoption of the Leeward Islands Act in this

colony and of providing for vested interests. I think such a course would greatly improve the position of the profession as a whole. I hope to be able to call a meeting of the profession before long to consider this and other matters affecting their interests as a body. Its members have the fullest right to be consulted on the practical effects of any such proposal. The position was set out in 1897 by Their Honours Judge Atkinson and Judge Sheriff, when the present Legal Practitioners Ordinance was before the Court of Policy.

“In the early days there was indeed a time when all the practitioners were practitioners at large without distinction and the change was probably made at the instance of or in the interest of the barristers who came to the colony. We are not at all sure that it would not be well now to abolish the distinction. It would be a boon to parties who are poor and who are now compelled in certain cases to employ a Solicitor and retain a Barrister as well.

Be that as it may the Barrister here is in reality a general Practitioner and not a Barrister in the English sense at all or at any rate in anything more than his exclusive right to appear in the higher Courts.”

RAILWAYS LABOUR AND COLONIZATION.

Schemes remunerative at the outset or the methods to be adopted to influence the introduction of capital cannot be dissociated from the railway problem, the labour question and projects of colonization, irrigation and drainage. I will first refer you to the remarks of our learned Chief Justice, Sir T. C. Rayner, on June 9th, at a luncheon given in his honour at the St. Lawrence Hall, Montreal, under the auspices of the Canadian West India League at the Canadian Club. Sir Crossley propounds the railway conundrum as follows:—

If we are to go ahead, it is generally conceded we must have a railway to the interior. We have any number of rivers, but unfortunately there is great difficulty in navigating them because of cataracts and falls. Many of our leading men claim we should have a railway right through the country to Brazil. Certainly if we had that, we should tap a country of the most fertile description.

Just to give one instance of what this might mean to us. In our back country we have thousands and thousands of miles of rolling savannah lands, precisely similar to that on which the great cattle herds of the world are raised and fed. We have cattle being raised there now, but owing to the absence of railway communication, which necessitates their having to be taken over the Brazilian frontiers to Manaos to find a market, it is generally agreed that the present numbers bear absolutely no comparison to those that our lands enable us to raise.

To you gentlemen here—fellow Britishers I would rather say (applause)—possessed as you happily are of an exchequer that is literally swimming over with money—yes, even surplus money, the problem of

building such a much needed line would present no difficulty. With us, unfortunately, this is not the case. With our small population taxation has reached the limit, or has pretty nearly reached it anyway. While we are quite willing to give grants of land, no one seems to be willing to make a railway simply in return for land. No one, leastways as yet, has proposed to build it without some kind of guarantee from the Government of payment of interest on capital expenditure. The problem therefore is, whether the colony can afford to pay the guarantee required. The settling of that question can be no light one for those on whom the heavy burden of Government falls."

When however, we find men, so exclusively associated with sugar as our good friend Mr. Charles Sandbach Parker, the Managing Director of the Demerara Company, engaged in endeavouring to find a way, the problem cannot be given up as hopeless. At the West Indian Agricultural Conference last year, Mr. Parker and his fellow representative of the West India Committee, Mr. Davson, held more than one consultation with the delegates from this colony of whom I happened to be one as President of this Society and when I saw him in London in December and January, he was already a long way advanced from the position of *non possumus* which the non-resident proprietors are sometimes accused of adopting. Mr. Parker, in an address given on March 13th at a City luncheon given by the Royal Colonial Institute, thus summarises his conclusions :—

(1) Surveys should be at once undertaken for construction of a railroad to open up a tract of land suitable for settlers at the point nearest to civilisation, bearing in mind the ultimate object of a trunk line to Manaos. I understand \$20,000 has already been voted by the Combined Court for this purpose. (2) A group of capitalists, English or Canadian if possible, or American, should be induced to undertake the construction of the railway by a guarantee of interest for a certain number of years, liberal grants of land, free import of materials and freedom from taxation for a term of years. (3) It should be stipulated that they import their own labour and undertake not to interfere with the present labour requirements of the colony. (4) Governments of Italy and Portugal should be approached with a view to ascertaining whether they would give assistance by way of a joint subsidy to steamers to bring families of settlers at special rates. (5) The labour supply available for sugar and other coast agricultural industries should be augmented by increased imports of East Indians. This ought not to fall entirely, as now upon the sugar industry, and I would suggest that the Government pay compensation to the sugar estates at so much per head for all labourers who, at the expiration of their five years' indenture, leave the sugar estates for other employment. The present initial cost, paid by the sugar industry, of immigrants is about £15 per head, of which £1 10s. is for half-cost of their return passage to India plus acreage tax 6s. 3d. per acre per annum on all land cultivated in sugar, which works out at about £26 a head, to which must be added expenditure on quinine and hospital treatment

during their early years in the colony. I cannot assess the sum to be so paid, but if the principle is admitted, the amount would be easily settled, half the total cost, say, £13 per head, would appear to be a fair basis. (6) The Imperial Government should be asked to assist development by contributing towards the cost of introduction of families of settlers by an annual grant, similar to that recently given to the Sudan. (7) An effort should be made to interest capitalists so as to enable them to secure some of the labour which will be set free by the completion of the Panama Canal in 1914-1915. (8) Arrangements should be made for the comfort of settlers on arrival by the establishment of Government rest-houses in suitable spots, which would offer a home to settlers, on their first arrival. (9) Inducement to capitalists to invest in sugar production would increase the wealth of the colony and provide part of the means for development of the interior. (10) Development must be gradual so as to avoid too great a strain on the Colonial resources.

In July, 1912, a writer in *Timohri* thus deals with the question of ways and means:—

The Hon. George Garnett, in his address at the Town Hall at the general election, mentioned £3,000 a mile as his estimate. I am inclined to fix £4,500 as closer to the real sum. I do so while realising that there are virtually no engineering difficulties except the inevitable bridging of the Essequibo. We have moreover none of the unhealthy conditions of other tropical countries. The death-rate of our balata industry is not even one per cent. I believe that a railway tapping the savannahs and aiming to link up with a line from Manaos would barely exceed 300 miles in length and could be built of a metre gauge for 1¼ millions sterling, the lengths mentioned in the debate being excessive. I also believe that even if the entire amount of any guarantee ever likely to be demanded by business men or given by a business Court were called upon from the colony it would be defrayed under an amortization scheme by a maximum increase on our present burdens of taxation of five per cent. There would be no need to fund the debt until it became due, (if it ever became due at all), by annual deficits, and payment of any guarantee for fifteen or twenty years could be spread over fifty or sixty. There is no reason why posterity should not pay a reasonable proportion of the cost of our work in providing them with a modern state in which to earn their livelihood. Borrowing from the able rhetoric of the First Lord we may ask: "What shall a colony have in exchange for its soul? A cheaper gin or whisky swizzle?"

Such estimates, however, must be merely a working hypothesis pending a report by skilled engineers after an exploration survey and after consideration of the present cost of materials and labour, which varies from year to year. The most important recent factor in the local railway problem has been the formation, on the invitation of the Hon. George Garnett, of a Railway Joint Committee by delegations from the Chamber of Commerce, the Planters' Association, the Royal Agricultural and Commercial

Society and the Balata Association to study the question. The members of this Joint Committee are pledged to no particular scheme, not even to the acceptance of the principle that a railway would open up anything at all, and its personnel is well known to be representative in every sense of the mercantile and agricultural communities (sugar being especially safeguarded) and to be naturally conservative in leaning. The scheme involves the formation of a sister committee in London of proprietors and others to advance the interests of the colony in regard to this question, while ensuring all proper precautions. This may be the present Demerara sub-Committee of the West India Committee or may be a body less exclusively representative of sugar, for the fact (for which I can suggest no remedy) that Mr. Mewburn Garnett is almost the only non-sugar representative of the colony permanently resident in London, exposes the West India sub-Committee to such a criticism. The Joint Committee will be prepared to give any necessary information to properly accredited individuals or syndicates who may desire to institute negotiations and will be ready to give assurances of a fair consideration of any proposals and, if they are found to have a business basis, of active assistance, to secure a full enquiry at the hands of the Government and the Legislature.

The theory of the Committee at least is sound and should re-assure any nervous sections of the sugar interest that no proposal involving increased taxation upon that harassed industry or a diminution of their present labour supply will be accepted without full provision for their special case. To this the industry is fully entitled as that with which the very existence of the colony is connected."

Since then the chief motive force of the Joint Committee in question, which held its meetings in these rooms, has gone with the lamented Hon. George Garnett, one of our Directors. I believe the President hopes to be able to revive its dormant energies and will not lose sight of the subject during his visit to England.

Mr. Parker thus advances the claim which this Society has so often made that we must be treated not as a half-derelict island in the South Seas (where some people think British Guiana lies) nor as a small sugar island in the West Indies (which Demerara is dimly known to be) but as a great continental possession of Great Britain as capable of development by intelligence, industry and capital as any part of South America. The actual amount unexpended of the \$20,000 voted in 1910 for a railway survey to Kaieteur is only \$4,374 but there would be no difficulty in securing an adequate vote. Your Excellency has made public your intention of visiting the Rupununi in September, in company with an experienced railway engineer so that part of the scheme is in a fair way to realization. The survey has at least made clear the fact that a tourist railway to Kaieteur is beyond our present resources. No doubt it has also increased the limited geographical acquaintance which many people possess of the colony in which they were born and bred or in which they earn their living. The fact that the Combined Court ever

thought such a scheme feasible shows how limited the original stock of knowledge was, but it is too late for reproaches now. Nobody who ever studied the question expected anything but the actual result. The possibilities of a metre gauge line starting from Georgetown passing up the right Bank of the Demerara River crossing the Essequibo on the ledge of rock near the Siparuni mouth and reaching the savannahs by the Burro Burro river valley in touch with the contemplated Brazilian line from Manaos, are quite another subject of investigation. But pending the ascertainment of the data we can only speculate.

With these preliminary observations I now declare the subject open for discussion, viz. : "Whether the colony can be developed without fresh taxation." I hope the speakers will remember that the Government alone cannot do everything and that it is only by the loyal and friendly co-operation of everybody in the colony, Government, Legislature and people, that our problems can be solved. I may mention that an increase of our present revenue by seven per cent. from any cause would mean a return of something over £40,000 or enough on a normal or even on the present market, to secure a development loan of one million sterling.

THE DISCUSSION.

His Excellency: I am sure we shall be glad to hear the opinions of any person on this most important question. I see many well-known faces of prominent citizens here. I hope we shall be able to hear their views.

Mr. E. G. Woolford, who was received with applause, said it was characteristic of the acting President, so early after his occupation of the chair, that he should so quickly vitalise the affairs of the Society by the debate of a subject which was pregnant with interest to every member of the community. It was sadly characteristic of the apathy displayed in the colony with regard to public affairs that no one had ventured to speak upon the subject. He had also gathered in his small experience that there were a good many in the community who were always willing to say: "Let the colony be developed," "Advance Guiana," and to use similar catch phrases; but very few were able to suggest the means by which that development could best take place. For his own part he would take this opportunity of calling attention to the system of taxation that prevailed. He regarded it as unfair, unjust and inequitable to what he might term the submerged tenth of the colony. He considered that whilst as inhabitants of the colony they should all try to further in every possible way its progress and development, they needed to recognise that it could not be obtained without increased measures of taxation, having regard to the limited nature of the population. And in the absence of any grand colonising scheme, in order to pay for the additional expense attendant upon any large development of that character, such as a railway project, it meant that the present population would have to bear the burden. It was with regard to that statement of affairs that he would direct His Excellency's attention. In his opinion

the system of taxation in the colony was much too indirect in its nature. No thinking individual in the community would sanction an increase either of the *ad valorem* or the specific duties. The *ad valorem* duty, it might be urged, fell equally on all classes, but all classes of the community could not equally contribute to it; and so far as the specific schedules were concerned the experience of every political economist taught them that the higher prices were advanced of the commodity the more restricted the consumption became. In this respect if they advanced the price of the cigar of the average citizen who belonged to the better class he would restrict his consumption or probably cease taking it altogether. So with regard to both schedules being put on an equal basis he could see no hope of extending the important duties in that way. Fresh fields had therefore to be sought out.

INCOME TAX.

He had in his humble way indicated a means by which that could best be achieved—the imposition of an income tax, which did not necessarily mean the reduction of one's income, but the arrest in a large measure of those huge sums of money that find their way out of the colony for the development of other places when they needed that money themselves. He felt perfectly convinced that it would stop the export of capital and place the colony in a better position to look after its own affairs. For any practical scheme by which the colony would progress it was imperative also that they should have a sturdier type of labour. Further there must be the settlement of the people on the land; and in order to relieve any possible drain on the colony's reserve he suggested the advisability of issuing currency notes, not necessarily bearing interest but at any rate redeemable in a short space of time. These notes should be made legal currency. It was the duty of every citizen to assist the Government in the colony's development, and with these notes he suggested the Government would always be in the position of having a certain sum of money readily available for the development of the colony's resources. Whether this development proceeded or not, if ever it became necessary for properly controlling and extending the machinery of Government, he hoped His Excellency would set his face against any increase in the form of indirect taxation. He gathered that the Government were at present considering some schemes having for their object the development of the colony. That might be a very admirable project, but if the present population was to bear the burden he hoped some scheme such as he had indicated would be initiated, so as to relieve the general mass of the inhabitants of any increased taxation.

POSSIBLE ECONOMIES.

Mr. G. Russell Garnett said that they required to know what was meant by development, whether it was to be gradual or rapid, whether development of the interior or development of the coast lands of the colony, or both, because a great deal depended on what they were going to do. (His Excellency: Hear, hear.) If they were going to develop

they could not take on all that and not increase taxation. For his own part, he would answer the question in the affirmative if it was a question of gradual development. The Chairman mentioned that there were such things as narrow economies, and referred to the time when Sir Alexander Swettenham was here and enforced certain retrenchment which he said led to disastrous results in one department. But the fact was on record that in one year while he was here the expenditure of the colony was under \$2,500,000. This year they should be spending very nearly \$3,000,000, a difference of about \$500,000 more being spent now than in those days, so that it could not be said very substantial economies could not be effected; he was quite satisfied that they could be. They had a highly elaborate Government system which was in his opinion far too good for the place. As an instance, he would mention just one thing. In almost every portion of the colony there was a doctor, magistrate, immigration agent, police inspector, and commissary. In other countries—he thought His Excellency would bear him out—most of these duties were undertaken by what was known as a district commissioner. Such a thing he had no doubt, could be established here and would save employing four men to do what one man could do perhaps. He got most disliked in the Combined Court for suggesting that a good deal might be knocked off the medical department not in the way of sanitation or the money being spent on improvements to save child life and so forth, but there were many ways in which he thought the service was run too extravagantly. Economies could be effected, and supposing they only managed to economise to the extent of half that \$500,000, there they were, the thing was done. With a saving of the difference he pointed out between the expenditure at the time he referred to and now, a large amount of capital would be raised to do gradual development with. One of the best forms of development was to induce people to come and settle in the colony. They wanted to increase the people in the place. The population was a miserably small one and they could not go on piling up the cost of carrying on the colony on the backs of those few people here. If there was double the number the colony would be doubly prosperous. His own belief was that if a scheme could be worked out and surely it could be, by which the Government assisted in introducing thousands and thousands of people, development would come of its own accord. They would not then want to think about raising taxation.

WORKING MAN'S PARADISE.

He did not think Mr. Woolford had looked up the statistics as regards the cost of taxation on the submerged tenth. If he did, he would find that the Customs duties paid by the working classes were very small. He would be surprised to find how much per head was paid by each labouring man. He was wrong in stating that taxation there was oppressive on the contrary, he thought everybody would admit it was rather a paradise for the working man. The question of development was a very big one, consequently he was surprised to find that

people should be chary in attacking it. After all it might end in talk, but no harm would be done by airing the subject. He saw several gentlemen in the room who had come to speak no doubt. They would all like to hear their views and he thought everybody who had ideas should put them forward.

THRIFTY POPULATION WANTED.

Mr. L. P. Hodge said there were many ways in which the resources of this colony might be increased. He thought the old members thought that taxation would not increase the colony's resources, but apart from that he would suggest other ways from which he thought the colony would derive benefit. First of all, there was the question of population. Population could be increased, and the proper way was by marriage. (Laughter.) In conclusion he said that a healthy, industrious and thrifty population was essential before the colony could embark on a highly important scheme which was very much needed.

MORE IMAGINATION WANTED.

The Hon. C. F. Wieting, who followed, expressed the view that the colony could not be developed without extra taxation, at any rate for the first few years. For it to be otherwise people must come and introduce capital. A lot of people did come and spend money but it was other people's money and the colony was no better off. (Laughter.) To his mind the question should not be: Could the colony be developed without extra taxation, but could it be developed at all? It seemed to him that they were worrying a great deal as to how they were going to find interest on capital when they had not made up their minds in what direction they were going to invest. He did not think the finding of interest on capital should be an impeding factor to development. When in London a year or two ago he was told that what was wanted in this colony was a little more imagination. Rapid strides had been made by other countries around them, such as Brazil and the Argentine, and the latter had so much money that they could pay £20,000 to £25,000 for Derby winners. He did not himself believe that anything would ever be done here unless they were willing to take considerable risks. They would talk and talk and do nothing unless they made up their minds to take big risks. They would never do it by spending a million dollars on topographical surveys. His point was that if they made up their minds to go in for development the question of interest should not be an impeding factor. It was only by development that they would ever reduce taxation at all.

THE GOVERNOR'S VIEWS.

His Excellency, who was accorded a warm reception on rising, said the subject that had been spoken about that afternoon was, he thought, one that had occupied the minds of the population of British Guiana for very many years, and probably more during the last eighteen months

than at any previous period. That was the question of development of the colony. When they spoke of development of this colony he believed they generally meant the development of the interior, but he quite agreed with Mr. Russell Garnett when he said they should not forget the coast-lands and their development at the same time. This colony was a very big one. They had the population concentrated in a narrow fringe along the coast. They spoke of a population of three to the square mile but, really, it was much more than that because practically all the population was on this narrow belt of coast-land and they were living in that narrow belt under very artificial conditions. "You cannot cultivate your land until you empolder it" proceeded His Excellency. "You have got to provide for letting out the water into the sea and at the same time you have got to provide for pumping it in from the interior. Now you have all grown accustomed to that here. You are not frightened at these burdens and you are willing to go on living in the coast belt and cultivating in that manner, but when you try to induce people from outside to come here that is a very different matter. The writer of this very interesting paper this afternoon spoke of the gold rush in the Pigeon Island district as having drawn away labour that is wanted on the East Coast. Doubtless that is so, but he forgot to mention that if you go a little further along the coast you find hundreds, possibly thousands, of people crying out for work and crying out for work so urgently that I have had to hurry on the construction of a road in order that some of them might find employment.

PLENTY OF LABOUR.

"There is plenty of labour in the colony," pursued His Excellency, "but it may be attracted from one district where it is wanted and, if that is so, the remedy is not the importation of labour from elsewhere but the attraction of labour further along the coast. I do not quite share the pessimistic view regarding the present year's rice crop and the possible disappearance of sugar cultivation. I have heard so often that rice crops are an absolute failure and I have so often had the great pleasure of going in harvest time to the same district and finding the crop was all right. I sincerely trust that the shortage of rain in Berbice, which has delayed the planting, may be only a temporary shortage and that in the autumn the people there will reap a decent crop. One company in sugar may fail to make sugar pay, but I have sufficient confidence in the East Coast lands, which seem specially designed for sugar cultivation. I have confidence enough in them to believe that sugar cultivation will continue and that it will continue to be profitable where it is supported by adequate capital. Poor companies cannot engage with success in sugar cultivation. I agree that if we are to have development, we must have rigid economy, and possible retrenchment in the public administration. I only hope it may be my good fortune to have reasonable schemes of economy and retrenchment placed before me, and if I have them, I will certainly do what I can to have them carried out. We should look to development

The basal 2 teeth on the femora are separated by double the distance the others are from each other ; the 2nd from the base is smaller than the others ; the 3rd and 4th are the longest ; all are oblique. Pro- and mesonotum transversely rugosely punctured ; the scutellum closely reticulated ; its apex in the middle behind the apical keel depressed, bordered laterally by 3 or 4 keels. Pro- and mesonotum thickly covered with black, the scutellum and mesonotum with longer white pubescence. Pro- and mesopleuræ smooth, the latter with 2 oblique furrows, the lower one the longer ; both strongly striated. Abdominal petiole twice longer than wide ; the abdomen as long as the head and thorax united ; gradually narrowed from the middle to the apex. Female. Length, 9 m.m.

Heptasmicra lycænae, sp. n.

Yellow, the mesonotum and scutellum slightly darker coloured, the antennal scape above, the flagellum, the centre of the hollowed central part of the front, the black extending shortly behind the anterior ocellus, the occiput, a large roundly bifurcated mark, united at the base by a narrower line and united to the scutellum by a still thicker line, slightly narrowed at the base ; a wide transverse line at the base of the scutellum, a line down the sides of the latter at the base, narrowed above, and not reaching to the top, a mark on the inner side of the outer lobe, becoming gradually widened to shortly beyond the middle, then narrowed towards the apex, a longish triangular mark in the centre of the scutellum, the narrowed end at the base, the apex rounded, the depressed base of the mesopleuræ, a large transverse mark, narrowed inwardly, on the outer side of the 2nd abdominal segment and lines on the apices of the 3rd, 4th and 5th, widened on the outer edge and united down the middle by a narrower line, the whole of the 6th, the apex of the hind coxæ, the mark narrowed in the centre, a line, 4 times longer than wide, narrowed at the base and apex on the outer side of the hind femora above, nearer the base than the apex, a large mark, between the basal 3 teeth, extending across to the middle, where it is slightly narrowed towards the middle on the inner side, a smaller, wider mark, widened and rounded above, an oblique squarish mark on the apex on the inner side and a semicircular one at the base below, close to the teeth and the basal and apical fourth of the hind tibiæ, black. Femoral teeth longish, stout, the basal 3 slightly smaller than the others. Apex of scutellum broadly rounded. Metanotum regularly closely areolated ; there are 3 rows of areæ ; there are 2 large central, wider than long, on the 2nd row ; narrowed at the apex in the centre ; this indentation is closed at the apex by a keel ; it is followed by a large, wider than long, area. Abdominal petiole short, twice longer than wide. Male. Length, 6-7 m m.

- Bred from Lycaenid, *Tmolus palegon*.

Heptasmicra curvilineata, sp. n.

Reddish yellow, the flagellum of antennæ black, fuscous below the lower part of the occiput, the basal three-fourths of the central lobe of mesonotum, a semicircular mark on the lateral lobes, narrower than the outer part, a

transverse line, transverse at the base, rounded at the apex, next to the scutellum, a transverse line, rounded at the apex, before the apex of the scutellum, an obscure line at the base of the metanotum, a broad curved line on the basal half of the hind coxæ, nearer the outer than the inner side, a curved line on the lower part of the hind femora, commencing at the middle of the basal 2 teeth and extending to the apex, the apices of the teeth and the under side of the hind tibiæ with the spurs, and distinct bands on the apices of the basal 4 abdominal segments and the apex of the ovipositor, black; wings hyaline, the nervures pale fuscous. Female. Length, 11 m.m.

Basal femoral tooth long, thin, curved, the 2nd minute, widely separated from it, the others irregular, the 3rd slightly smaller than the apical 4 which are of about the same size. Apex of scutellum projecting into a leaf-like plate, the apex of which is broadly roundly incised Metanotum with 2 large central hexagonal areæ; a small hexagonal one on the sides at the base; there is a rounded keel at the base, at the apex of the large areæ at the inner sides of which, shortly beyond the middle, are 2 short broken keels. Abdomen not much longer than the head and thorax, the petiole not much longer than wide. Basal slope of pronotum pitted with shallow punctures, the apex, mesonotum, and scutellum umbilically punctate—Propleuræ smooth; the base of the mesopleuræ smooth, the depressed centre closely striated, the apex and the metapleuræ umbilically punctate.

Ceratosmicra flavescens, sp. n.

Pallid testaceous, the face, pronotum, sutures of mesonotum, basal half of scutellum and the pleuræ, paler, more yellowish in tint; the dilated part of the abdomen rufo-testaceous, wings hyaline, the nervures fuscous; the femoral teeth black, the basal bluntly triangular; they are about 13 in number, the apical closely pressed together; there are no areæ on the metanotum; it has a not very clearly defined, central keel and a curved one round the apex; on its sides is a broad keel, dilated at the apex, followed by a broadly rounded tooth. Abdominal petiole more than half the length of the thorax, not quite so long as the rest of the abdomen and about two-thirds of the length of the hind coxæ; abdomen as long as the thorax. Smooth, shining, sparsely covered with a white pubescence. Male. Length, 3 m.m.

The middle of the antennæ reaches to the ocelli; the apical half is thicker than the lower and is dilated towards the apex.

Ceratosmicra? variventris, sp. n.

Black, the antennal scape, a broad line, narrowed above and below—more acutely and longly above than below—on the inner orbits and the abdominal petiole yellow; the rest of the abdomen and the legs red, the apices of the 4 anterior coxæ and femora and the base of the femora in front pallid yellow. the tarsi testaceous, the hind tibiæ fuscous, dark testaceous on the basal half; there are 16 or 17 short black femoral teeth. Abdominal petiole half the length of the thorax and two-thirds of the length of the hind coxæ. Wings hyaline, the nervures black. A stout reddish keel runs down from the lower

part of the front to the clypeus, it becoming narrowed below, the clypeus, labrum and mandibles dark red. A stout keel runs down the basal half of the metanotum in the centre; it then bifurcates to the outer edge of the apex; the inner half of the base is shagreened, the outer edge bears stout irregular transverse striæ. Female. Length, 5 m.m.

Thickly covered with short white pubescence. The vertex, sides of front and the face strongly, but not closely punctured: the frontal depression finely, closely transversely striated. Basal slope of pronotum transversely aciculated, punctured sparsely round the edges. Mesonotum and scutellum strongly, closely punctured; the latter gradually narrowed from the base to the apex; its sides furrowed. The sides of the metanotum are broadly rounded, without teeth. Propleuræ aciculated, the upper half depressed, finely, closely striated at the apex; there is a longish oval fovea on the lower basal part. Mesopleuræ raised to a point in the centre, the basal slope smooth, the apical with oblique irregular striæ, the top at the base and the lower part at the apex with short striæ, the top with the striæ more regular and distinct than the lower edge; the centre below forms a triangle and is strongly punctured.

This is not a typical *Ceratostmira*, the metanotum not being toothed laterally, nor is the antennal scape dilated above. The latter is long, slender and extends clearly above the top of the vertex.

Sayella quadrilineata, sp. n.

Pallid yellow, the ocellar region, occiput except at the eyes, 3 broad lines down the mesonotum, the central of equal width, a line, slightly narrower than that on the middle of the mesonotum, down the middle of the scutellum, a narrower line round the base of the metanotum, the lower parts of the meso and metapleuræ broadly, and the apex of the 2nd and the whole of the following abdominal segments, black, the black on the abdomen of a deeper tint than on the thorax; legs: the 4 anterior whitish yellow, the femora slightly infuscated in the middle, the hind legs rufo-testaceous, the apical fourth of the coxæ, an irregular spot on the outer, apical part of the femora, the base and apex of the tibiæ, and the tarsi whitish yellow; the femoral teeth small, black, about 16 in number, the basal about twice the size of the next. Parapsidal furrows deep. Apex of scutellum broadly rounded. Base of metanotum with a moderately broad striated belt, the striæ stout and clearly separated; this is followed by a row of small areæ, those in the centre square; the outer of these not clearly separated; next, on either side, are 2 areæ, the outer the larger, rounded on the outer side, the inner much narrowed towards the outer, apical side; next are 2 larger areæ, the inner, or central much the larger, twice longer than it is wide at the apex, the base gradually rounded to a point, projecting into the 3rd row of areæ, the outer is large, as long as it is wide at the apex, which is rounded inwardly. Metapleuræ widely, irregularly reticulated. Abdominal petiole nearly as long as the thorax and almost twice the length of the rest of the abdomen; it is dilated beyond the middle,

the apex itself being narrowed, its base below is bordered by two triangular teeth. Wings hyaline, the nervures pallid. Male. Length, 3 m.m.

Apex of pronotum, mesonotum and scutellum closely reticulated-punctured; the middle lobe in the middle more or less transversely striated. There is an oblique depression, widened below, in the middle of the propleuræ.

Bred from the larva of a plume moth (Pterophorid.)

PERILAMPIDÆ.

Perilampus caeruleiventris, sp. n.

The frontal depression, cheeks, face, clypeus malar space outer orbits, the meso-metapleuræ the sternum dark blue, the back of abdomen of a still darker blue, its sides and ventral surface of a brighter blue than the head; the sides of the front and vertex brassy firey red; the pronotum, mesonotum and scutellum closely, regularly reticulated, the depressed part of the reticulations dark blue, the borders of the reticulations of a dark purple, the mesonotum at the apex smooth, dark purple on the inner half of the middle lobe. Pleuræ smooth, a wide crenulated border on the base of the propleuræ; the base of the propleuræ reticulated, the apex near the middle with 3 irregular foveæ; a curved line of large foveæ on the base of the mesopleuræ; there is a curved, crenulated furrow on the apex, angled towards the middle on the apex; the upper part is narrower and much shorter than the lower; there is a wide furrow on the upper two-thirds of the base of the metapleuræ formed of foveæ, and there are foveæ on the upperapical part. The scutellum is a little longer than it is wide at the base; the sides and apex are margined below; on the sides of the base is a large smooth triangular space, the narrowed end on the inner side. The abdomen is sparsely covered with white hairs. Legs (especially the tibiæ) densely covered with white hair.

EUCHARINÆ.

Kapala cuprea, sp. n.

Dark coppery, the dilated apex of the abdomen dark blue, the antennæ fulvo-testaceous the legs, except the coxæ, pale testaceous, the outer apical half of the mandibles dark rufous, the palpi dark testaceous; wings hyaline, the nervures, dark fuscous. Male. Length, 5 m.m.

Face and clypeus with violaceous tint; the centre of the face roundly raised, smooth; the clypeus smooth, with a large oblique foveæ on either side above; the sides of the head from the edge of the occiput to the malar space obliquely striated, the striæ strong above, becoming gradually finer and closer below where they curl round the eyes. The antennal rami are deasely covered with short fuscous hair. Malar space a little longer than the eyes. Middle lobe of mesonotum strongly longitudinally striated, the striæ uniform and clearly separated; the outer lobes much more finely striated at the base and on the inner side, the rest smooth. Scutellum strongly, closely

longitudinally striated; the metanotum more finely and closely than it; the striæ on the forks stronger and curved; the space at the apex between them has 2 stout keels on either side and a finer roundly curved one at the apex; there are some broken keels between. The central part or the lower region of the metanotum is finely, closely punctured. Upper part of propleuræ densely covered with a longish white pile; below is a stout curved keel, with a curved depression above; on the upper central part of the mesopleuræ are some fine curved longitudinal striæ; below are 2 long upper and 2 shorter lower keels. Abdominal petiole twice the length of the hind coxæ.

Holcokapala, gen. n.

Female. Antennæ short, stout, 10-jointed, the 3rd, 4th and 5th antennal joints longer than wide, of equal length; the last conical, longer than the preceding. Mesonotum transversely striated; the scutellum smooth, a wide deep furrow, widened towards the apex; the processes stout, extending close to the apex of the abdomen, curving and converging at the end. Metanotum with an oblique slope, smooth. Abdominal petiole about 3 times longer than wide and as long as the hind coxæ. Apex of clypeus margined, transverse, the sides rounded; the sides above are foveate. Malar space as long as the eyes. Ocelli in a line. Head striated above; it is bare; the thorax pubescent; parapsidal furrows distinct; the middle lobe of mesonotum has a shallow furrow down the middle. Pleuræ almost smooth.

Comes near to *Lasiokapala*, which has the head and scutellum processes smooth, the latter long and extending beyond the apex of the abdomen.

Holcokapala striaticeps, sp. n.

Black, the mandibles, antennæ and the 3rd and following segments of the abdomen rufo-testaceous; palpi dark testaceous; legs, except the coxæ, yellowish testaceous; the basal part of the abdomen has a blue tint; wings hyaline, the nervures pale testaceous. Female. Length, 4-5 m.m.

Sides of front and vertex finely closely longitudinally striated, the striæ curving outwardly below, the striæ on the malar space stronger, somewhat rounded and transverse, the outer orbits longitudinally striated. Basal part of mesonotum strongly irregularly striated, more closely and regularly on the base than on the apex; the apical part is smooth as is also the scutellum. The processes are stoutly striated from the base to the apex. Metanotum smooth, its sides bordered by keels which roundly curved and unite at the bottom below. Propleuræ excavated, bordered by a rounded keel near the top. Mesopleuræ irregularly weakly longitudinally striated; the lower apical part is much more finely and regularly striated; the mesosternum is bordered by a weakly crenulated furrow, and there is a vertical one on the base of the apical fourth, commencing near the top. Metapleuræ irregularly reticulated.

Dicalothorax parviceps, sp. n.

Black, the 2nd and 3rd segments of the abdomen tinged with violaceous; the mandibles, antennæ and the greater part of the 4th and following abdominal segments rufo-testaceous, the apical half of the femora, tibiæ, tarsi

and a narrow line on the inner side of the scutellum process whitish testaceous; the basal half of the femora tinged with fuscous on the outside. Wings hyaline, the nervures fuscous. Female. Length, 4 m m.

Head opaque, coarsely shagreened, the sides of the vertex almost reticulated; frontal depression moderately wide and deep, the sides keeled, the top rounded, enclosing the front ocellus. Temples short, the occiput oblique. Malar space distinctly longer than the eyes. The head is short and is clearly narrower than the thorax. Prothorax smooth, the upper apical part of the propleuræ with a few obscure striæ; the base with a sharp slope, margined round the edges, narrowed to a point above. Mesonotum striated, the striæ clearly separated, the top depressed in the centre, smooth, obliquely narrowed from the top to the middle, where it is deepest. Scutellar process extending to the apex, of the 3rd abdominal segment, of equal width to the apex, which is oblique; they are closely, strongly regularly longitudinally striated, are slightly depressed in the middle above. Metanotum smooth, the sides keeled, a stouter keel down the middle, it has a straight, oblique slope. Abdominal petiole twice the length of the hind coxæ.

The form of the scutellar process is different from what it is in the type of the genus—*platycerus* Ashm., Mem. Cairn. Mus. i, Pl. XXXV., f. 3,—it being in that species much wider, bulging out in the middle and rounded at the apex, not of equal width and obliquely truncated at the apex. There seems to be also a radical difference in the relative lengths of the antennal joints, but I am not sure that I understand the description given

TORYMINÆ.

Torymus guyanaus, sp. n.

Antennal scape fulvous, the flagellum black, the basal joints fuscous. Head green, tinged with blue on the top and outer orbits, covered with short, white pubescence. Mandibles dark fulvous, the teeth black. Face covered with round, distinctly separated large punctures; sides of front finely closely, irregularly striated. Vertex aciculated; a distinct, clearly defined furrow runs down, slightly obliquely on either side of the middle, to the antennæ. Prothorax finely distinctly aciculated, broadly purple in the middle, the base and apex green. Mesonotum green, the base and apex largely purple; the parapsidal furrows distinct; the central division coarsely aciculated, the lateral lobes finely reticulated, more strongly on the apex than base. Scutellum closely aciculated, the basal three-fourths with scattered punctures—Pro- and mesopleuræ aciculated, almost punctured, the former largely purple above. Metapleuræ smooth. The pubescence on the thorax is sparse and white. Abdomen mostly blue largely variegated with violaceous and purple tints. Four front coxæ violaceous, the middle blue at the apex, the hinder dark green; all are closely distinctly punctured; the four front femora brown, testaceous at the base and apex, as are also the trochanters, the hinder femora green, the base, apex and lower side purple; the apex of the femora and the tibiæ testaceous, the hinder

tibiæ with more than the apical half fuscous behind, the apex fuscous all round; the tarsi are of a paler, whitish testaceous colour. Wings clear hyaline, the nervures whitish testaceous; they are very iridescent. Female. Length, body and ovipositor, nearly 2 m.m.

The legs are densely covered with longish white pubescence: the sheaths of the ovipositor densely with stiff black pubescence. The abdominal segments are fringed with white hair. The apex of the scutellum being smooth, not punctured like the rest, makes this species almost a *Syntomaspis*, but on the whole it seems to be a *Torymus*.

Syntomaspis loranthi, sp. n.

Green with brassy tints, the 2nd and following segments of the abdomen dark violaceous, the antennal scape and the 1st joint of the flagellum dark fulvous; the four front legs rufo-testaceous, their coxæ, trochanters and the greater part of the femora fuscous, almost black, the hind coxæ, trochanters and femora green, the apex of the femora, tibiæ and tarsi rufo-testaceous; wings clear hyaline, the nervures pallidtestaceous. Male. Length, 2 m.m.

Head finely, closely reticulated, the occiput smooth. Pronotum in the centre brownish, closely aciculated, a fine keel down the middle, the base and sides with scattered punctures. Mesonotum strongly umbilically punctate, clearly trilobate, the apex brassy. The basal part of scutellum less strongly and more closely umbilically punctate than the mesonotum; the apical division in the middle finely closely punctured, the sides closely, rather strongly obliquely striated, the two divisions clearly separated. Metapleuræ smooth. Upper part of propleuræ irregularly, strongly punctured, the rest strongly aciculated; the raised central part of the mesopleuræ closely, distinctly punctured. Metapleuræ smooth. Abdomen smooth and shining. Coxæ closely, distinctly punctured. Bred from gall on "bird vine" (*Loranthus*).

EURYTOMIDÆ.

EURYTOMINI.

Eurytoma guianaensis, sp. n.

Black, covered with white pubescence, the antennæ dark testaceous, covered with white pubescence, the legs whitish testaceous, the femora distinctly tinged with rufo-fulvous; the ventral surface broadly rufous; wings hyaline, the nervures whitish yellow, as are also the tegulæ. The metapleuræ more densely pilose than the rest of the thorax. The hypopygium largely projects, as does also the sheath of the ovipositor. Head and the thorax above closely umbilically punctate, the propleuræ finely, closely, longitudinally reticulated. Basal part of mesopleuræ finely, closely reticulated, the apical shining, smooth above, the lower part finely, closely striated, the apex crenulated. Metapleuræ apparently glutaceous, but the sculpture almost hidden by the dense longish hair. The apical two-thirds of the 2nd segment and the following are aciculated and covered with white pubescence, especially at the apices. Female. Length, 2 m.m.

The pedicle of the antennæ is bare and shining, twice longer than wide, narrowed at the base and thinner than the next, which is the longest and two and a half times longer than wide, the others are shorter, longer than wide. Parapsidal furrows distinct on basal half of mesonotum. only.

Eurytoma couridæ, sp. n.

Black, the antennæ, head, thorax and legs densely covered with white pubescence, the antennæ and legs rufo-testaceous, the tibiæ and more especially, the tarsi paler, whiter than the femora, the apical ventral segments piceous; wings hyaline, the nervures pallid testaceous. Head and thorax above closely umbilically punctate, the head more finely than the thorax, the pronotum more finely than the mesonotum and the latter somewhat more finely than the scutellum. Propleuræ finely, closely obliquely reticulated, as is also, but more finely and obliquely, the mesopleuræ, except at the base and apex above, which are smooth and shining. Metapleuræ apparently alutaceous, but the sculpture is hidden by the dense pubescence. Abdomen entirely smooth and shining. Female. Length, 1.5 m.m.

Eurytoma leuconeura, sp. n.

Black, the head, thorax and legs densely covered with white pubescence, the fore legs, except the coxæ and base of femora, the middle, except the coxæ and basal two-thirds of the femora and the hinder, except the coxæ, trochanters and the femora except narrowly at the apex, rufo-testaceous, the hind tibiæ infuscated; wings hyaline, the nervures and stigma white. Male. Length, 3 m.m.

Head and thorax umbilically punctate; the orbits bordered by a row of foveæ. Propleuræ closely, coarsely aciculated, almost punctured; there are two or three foveæ on the apex above. Basal half of mesopleuræ closely, finely reticulated, bordered behind; the apex irregularly obliquely striated. Metapleuræ closely, rugosely reticulated. Abdominal petiole opaque, aciculated, as long as the hind coxæ. The hairs on the antennæ are clear white and are as long as the joints. Female.

Lisseurytoma, gen. nov.

Antennæ 10-jointed the scape long, slender, extending above the head, the anellus one-jointed, longer than wide, narrowed at the base, the apical three joints slightly thickened, the 3rd and 4th subequal. Malar space about one quarter longer than the eyes, a narrow, but distinct furrow down it. Head wider than the thorax; occiput not margined. Ocelli in a curve. Pronotum three-fourths of the length of the mesonotum, which has distinct furrows; the latter are placed near the sides so that the middle lobe is much larger than the lateral. Scutellum large, flat, longer than wide, not narrowed at base and apex, a distinct furrow on either side of the middle. Metanotum with a longish, rounded slope, irregularly reticulated. Abdomen shorter than the thorax, longish ovate, the base broader than the apex which is sharply pointed. Wings unspotted, the stigma branch of equal width, much longer than the post-marginal, which is very short; marginal vein very long,

longer than the basal which is much thinner than it and runs into and above its upper part at the costæ. Hind tibiæ with two spurs—5th abdominal segment slightly shorter than the 4th; the thorax is at the most shagreened; the abdomen smooth and shining. The antennæ are inserted well upon the head, distinctly nearer the ocelli than the mouth.

In the arrangement of Ashmead (Mem. Cairn. Mus. i. 262), this genus runs near to *Xanthosoma*. Its characteristic features are the smooth body, long slender antennal scape projecting largely above the head, the large scutellum of equal width and bearing two furrows, the long marginal and short post-marginal.

Lisseurytoma nigricornis, sp. n.

Testaceous, the flagellum of antennæ, tips of mandibles and apical joint of antennæ black; wings clear hyaline, the nervures fuscous—smooth, shining bare, except the flagellum which is covered with stiff longish black hair. Antennæ as long as the head and thorax united. Female. Length, 2 m.m.

Bred from pupæ found in fruit of *Cardiospermum halicacabum*, Probably the host was one of the fruit feeding Diptera.

Bephrata maculicollis, sp. n.

Black, densely covered with white pubescence, the sides of the front, the mark continued along the orbits to the middle of the top of the eyes, it becoming gradually narrowed above, the face except in the centre, oral region, the lower three-fourths of the outer orbits, malar space, mandibles except the teeth, the prothorax, except three large marks on the pronotum, the central extending from the base to the apex, the lateral not commencing at the base, the abdomen and legs, fulvo-testaceous, the abdomen darker coloured, the apical segments almost black, the coxæ and femora are fuscous for the greater part; the tibiæ and tarsi are densely covered with white pubescence; the abdominal segments are fringed with long white hair. Antennal scape and the 2nd joint of flagellum testaceous, the rest black, brownish below; the 3rd joint about one third longer than the 4th. Wings hyaline, a large fuscous cloud in the centre, extending to the end of the stigmal branch; the basal nervures black, those in the cloud fuscous; the costa has the apical third thickened, bullated at the end. Head and thorax coarsely umbilically punctate, the punctures on the metanotum larger, forming reticulations. Malar space longer than the eyes; the occiput margined—The black central part of the face is smooth, bare, shining and with a smooth keel down the middle. Clypeus smooth, bordered by an obscurely crenulated furrow. Collar large, but shorter than the upper part of the head. Scutellum longer than wide, the apex ending in two bluntly rounded projections. The sides of metanotum are broadly rounded. Female. Length, 8 mm.

The abdomen is compressed; its base is broadly rounded above, projecting above the thorax; from this raised part, becomes gradually narrowed.

DECATOMINI.

Decatoma couridæ, sp. n.

Black, the antennæ, the sides of pronotum, slightly more broadly than the black central part, which is somewhat narrowed at the base and the upper third of the propleuræ, the mark on the latter longer at the base and apex, through the black colour of the lower part projecting upwards in the middle, yellowish testaceous, the four front legs whitish testaceous, the two anterior femora black entirely on the basal half; above the black projects beyond the middle, the middle femora are more broadly black, their tibiæ black, except at base and apex; hind legs black, the trochanters, base and apex of tibiæ and the tarsi white; wings hyaline, the stigma black, the other nervures pale, the cloud oblique, three times longer than wide, fuscous. Female and Male. Length, 2 mm.

Bred from galls on *Courida* leaves.

Head aciculated, the lower part in front from the middle of the eyes much more strongly so, almost punctured. Pro- and mesonotum umbilically punctate. Scutellum umbilically punctate at the base, the rest rather strongly transversely striated. Metanotum irregularly reticulated. Pro- and mesopleuræ aciculated, the raised, central part of the mesopleuræ irregularly striated. Metapleuræ rugosely reticulated. Abdominal petiole in female 3 times longer than wide; the abdomen smooth and shining, shorter than the thorax. The antennal pedicle is longer and thinner than the next four which are more ovate; the apical joints form a club.

Prodecatoma couridæ, sp. n.

Yellowish testaceous, three spots, the central the larger on the occiput, an irregular mark, wider than long, on the mesonotum, a longish triangular spot, the narrowed end at the base, on the centre of the scutellum, a trilobate mark, the lateral lobes shorter and rounder than the central, which is narrowed at the apex, black; wings hyaline, the nervures testaceous. Abdominal petiole thick, about four times longer than wide, half the length of the rest of the abdomen. Antennæ short, about twice the length of the width of the head, thickened towards the apex, the 3rd joint thinner and longer than the others, one-half longer than the 4th, which is a little longer than wide, the others, except the last, wider than long. Thorax above weakly umbilically punctate; the metapleuræ irregularly reticulated densely covered with white pubescence. Head almost smooth; malar space three-fourths of the length of the eyes. Female. Length, nearly 2 mm.

Bred from galls on leaves of *Courida*. Abdomen shorter than the thorax. Stigma testaceous, the nervures white.

Prodecatoma latilineata, sp. n.

Yellowish testaceous, a broad, black line on the vertex across the ocelli, obliquely narrowed laterally, a broad line down the centre of the entire body, broader on the mesonotum than on the metanotum and narrowed at the base

and apex there covering the top part of the petiole and extending on to the sides of the rest of the abdomen, broadly so on the middle segments, the lower part of the occiput and the base of the prothorax as well as a small spot on the outer side of the hinder femora and almost the apical half of the hind tibiæ and the apical joint of the tarsi are black. Antennæ coloured like the body, the apical half of the scape and the pedicle black above, the apical joint fuscous the hairs about as long as the joints, white. Male. Length, 2.5 mm.

Bred from galls on leaves of *Smilax*.

Face strongly, closely striated, the striæ roundly converging towards the mouth and extending on to the inner half of the malar space. The rest of the head umbilically punctured, as is also, but more strongly, the upper part of the thorax. Pro- and meso- pleuræ almost smooth, the meta-pleuræ rugosely punctured, densely covered with white pubescence. Abdominal petiole longer than all the rest of the abdomen and about half the length of the abdomen. The pedicle of the antennæ is transversely oval, wider than long, there is a triangular incision between 3rd and 4th and the 5th and 6th joints, the 3rd joint is shorter than the 4th, the last slightly longer than the penultimate. Malar space as long as the eyes, furrowed.

CLEONYMIDÆ.

Lycisca rufipes, sp. n.

Antennal scape dark green, largely tinged with brassy tints, the flagellum black. Head green, largely marked with brassy tints, the vertex and the greater part of the front dark purple, the mark on the front narrowed below, leaving a longish triangular spot at the orbits, its narrowed end above. Face, clypeus and to a less extent, the malar space densely covered with silvery white pubescence. Malar space about half the length of the eyes; a narrow, oblique brassy furrow outside its middle. Prothorax green, largely brassy, a small purple spot on the centre near the apex. Mesonotum more bluish in tint, the middle lobe dark purple. Scutellum firey red except for a small greenish spot in the centre of the apex. Pleuræ green, tinged with blue; the base and apex of the propleuræ below brassy; there is a large firey red depression on the upper part of the mesopleuræ, gradually narrowed to a finer point at the apex, the lower side broadly rounded. Basal slope of 1st abdominal segment green, the rest of it, the whole of the 2nd the 3rd—except for an oval longish mark on the sides of the apical half the 4th with a large conical mark, filling the segment except at the sides and apex, dark purple, the 5th brassy, the 6th dark purple; the basal ventral segment dark purple, the others green except for triangular marks on the sides of the 3rd and 4th. Legs red, the basal half of the hind tibiæ and the hind tarsi fuscous. Wings hyaline, a small cloud at the end of the submarginal and a smaller one at the end of the stigmal; the nervures black. Female. Length, 7 mm.

Strongly umbilically punctate, the thorax more strongly than the head the scutellum somewhat more strongly than the mesonotum. Metanotum areolated widely; the central keel is straight, the two bounding it are roundly

curved outwardly, making the area wider at the apex than at the base; outside them is a large semicircular area, its base as wide as the base of the inner two united; it is bordered by a narrower oblique area, which is narrowed towards the apex and bears the oval spiracles at the base. Upper part of the propleuræ punctured like the pronotum, the lower part finely irregularly striated. Mesopleuræ strongly closely, but not umbilically punctured, the upper part with a smooth, shining area, narrowed near the centre, the base more sharply pointed than the apex; the mesosternum strongly rugosely punctured, bordered laterally by a crenulated furrow. Basal slope of 1st abdominal segment smooth, its apex and 2nd segment finely and closely punctured; the others much more strongly punctured; the ventral surface is not so strongly, nor so closely punctured as them. The ædigus has two long lateral processes, dilated at the apex. Male. Length, 7 mm.

Except on the face the pubescence is sparse. There is a distinct, narrowed rounded projection on the lower part of the apex of scutellum; it is hollowed above and with a narrow furrow in the centre, and purple violaceous in colour.

MOORELLA, gen. nov.

Antennæ placed close to the mouth, the scape long, reaching to the ocelli; 13-jointed, the apical 3 joints forming almost a club. Eyes large, converging above. Ocelli in a large triangle, the hinder close to the eyes. Occiput transverse, the temples, short. Malar space two-thirds of the length of the eyes. Pronotum large, narrowed towards the base, the middle as long as the mesonotum, which is slightly wider than long; a narrow transverse line at its base. Scutellum large, triangular, a curved furrow at its base, separating the base from the main part. Abdomen as wide, but shorter than the thorax, sessile. Four anterior legs normal; the hinder very long, longer than the body, the tibiæ longer than the basal 3 joints united, compressed laterally, and widened, the base narrowed, the top broadly rounded, slightly narrowed towards the apex; on the outer side they are hollowed, the hind spurs are short, thick, the middle long almost as long as metatarsus; the metatarsus is not quite so long as the other joints united. Submarginal nervure long, the marginal short and thickened forming a stigma, the post-marginal long, becoming narrowed towards the apex, it is indistinctly defined compared with the other nervures; the stigmal branch is straight, oblique, of equal width throughout; there is a large cloud in the middle of the fore-wings.

The mesopleuræ are bordered below by a broadly rounded furrow which extends from the base to the apex; the mesosternum has a wider furrow down the middle. The abdominal segments are transverse; the hypopygium longish, cultriform. The middle coxæ are not swollen or enlarged; the anterior are larger and longer the single spur on the middle tibiæ is about three-fourths of the length of metatarsus. I can only, for the present, refer this genus to the *Cleonymidæ*, but not to any of the tribes included in that group. It may be referred to a new sub-family in it. The discovery of the male may throw some light on its systematic position. The peculiar

structure and great length of the hind legs should make the genus easily recognisable.

The genus is dedicated to Mr. Harold W. B. Moore, formerly of the Guiana Museum, who has reared most of the parasite Hymenoptera described in these papers.

Moorella fulviceps, sp. n.

Black, the head fulvous, the pronotum of a paler fulvous colour, the propleuræ pale testaceous, the base and apex of the abdomen, the former on the basal segment all round and the latter much more narrowly on the apical white segment; antennæ testaceous, the scape paler, more yellowish in colour; anterior legs whitish, the coxæ and trochanters of a clearer white, the middle pair fuscous, the hinder black, the apical three-fourths of the 1st joint of the tarsi, and the whole of the 2nd to 4th white, the 5th fuscous. Wings hyaline, the submarginal nervure fuscous, the others black, a large fuscous cloud, commencing at the stigma where it is narrowed and extends to the hinder margin of the wing; the base is almost straight, the apex broadly rounded. Covered with a white microscopic pile; smooth and shining, the apex of the mesonotum and the scutellum finely, closely punctured, the latter with a few punctures in the centre. Mesopleuræ opaque, bare, almost aciculated. Female. Length, 1.5 mm.

The hind tarsi are one third of the length of the tibiæ. The wings are pilose and distinctly ciliated round the outer margin.

ENCYRTIDÆ.

EUPELMINÆ.

Phlebotopenes albopilosellus, sp. n.

Metallic green, the lateral lobes of the mesonotum broadly dark purple, the back of the abdomen broadly of a brighter purple, the centre of the front below, the lower lateral part of the face, a line on the inner side of malar space, the basal half of the scutellum, the parts bordering it, post-scutellum, the sides of metanotum and a large irregular mark down the middle of the mesopleuræ dark indigo-blue the mesonotum in front, the pleuræ, mesosternum and sides of abdomen with brassy tints; legs black, the femora and more particularly the hinder, green, the hind tibiæ at the base with a white ring, as long as the hind spurs. Wings hyaline, the centre of the anterior with fuscous streaks, the nervures black. Female. Length, 11 mm. terebra, 24 mm.

Antennal scape dark green, narrowed to a point in the centre below, distinctly keeled there. Face raised slightly in the centre, bordered by shallow furrows which converge slightly above; finely, closely punctured, the sides irregularly transversely striated. Front and vertex finely closely punctured. The raised central lobe of the mesonotum is finely closely transversely striated; the raised, basal central lobe is more strongly striated, especially on the sides at the base; the scutellum finely striated, becoming stronger towards the apex; the outer edge of the mesonotum is raised into a keel, inside of which

is a stoutly crenulated furrow. Mesonotum finely aciculated, almost smooth. Basal third of propleuræ smooth, the apex above finely closely punctured, below more strongly closely, obliquely striated. Base of mesopleuræ finely aciculated, the base and middle finely striated the apex finely striated, bordered behind by a narrow clearly defined crenulated furrow which extends along the sternum to the apex. Basal half of metapleuræ smooth, the apical finely, closely reticulated, the two parts separated by a smooth oblique furrow. Mesosternum with a wide furrow deepest on outerside. On the sides, the hind tarsi are dilated, becoming gradually thinner towards the apex; the basal joint is as long as the following two united; the spurs thick, sharply pointed at the apex, closely, thickly serrated below, the claws small, curved. Mandibles tridentate, the apical tooth longer and sharper than the basal, which are bluntly rounded of equal size.

Phlebopenes Perty is identical with *Prionopelma* West. It is a genus well represented in the Neotropical Region and contains some of the largest Chalcids.

ELACHISTINÆ.

Elachistus carinatus. sp. n.

Black, shining, the antennæ testaceous, darker towards the apex, the legs yellowish fulvous, the coxæ and apex of femora with the fulvous tint brighter redder; the abdomen on the basal half broadly pale testaceous. Head and thorax sparsely covered with long white hair; the legs densely covered with white pubescence. Head and prothorax smooth, the mesonotum to near the apex strongly closely, transversely striated. Scutellum finely, closely, distinctly punctured, the ribs sides smooth and shining. Pleuræ smooth the propleuræ depressed in the middle. The antennæ are sparsely covered with long white hairs. Male. Length, 3 mm.

Bred from larva of Hawk-Moth.

The mesonotum has a distinct keel down the middle. Face broadly, roundly keeled in the middle, not separated from the clypeus. Prothorax prominent, narrowed, clearly separated from the mesonotum, which has narrow, but distinct parapsidal furrows and a distinct keel down the middle. Scutellum large, narrow at the base, bordered there laterally by oblique furrows, the apex bluntly rounded. Abdomen short, ovate, flat, shortly, but distinctly pedunculated. The short hind spur not quite so long as the metatarsus, the longer as long as the basal two joints united.

CHALCIDIDÆ.

EURYTOMINÆ.

Xenopelte, gen. nov.

Antennæ 10-jointed, the last three forming an indistinct club, the pedicel smooth, narrowed at the base, twice longer than wide, the others pilose, wider than long; they are placed immediately over the clypeus, which is clearly

separated all round. Eyes large, oval; the malar space as long as the antennal pedicel. Ocelli in a curve; the hinder separated from each other by double the distance they are from the eyes. Occiput almost transverse. The pronotum, scutellum, and mesonotum of almost equal length; there are complete parapsidal furrows. 2nd abdominal segment very large, as long as the head and thorax united. Post-marginal vein longer than the stigmal, submarginal almost twice the length of the marginal. Legs normal, pilose.

A genus of *Eurytomini* easily known by the very large 2nd abdominal segment; it being, as regards the length in comparison with the others, somewhat as in the genus *Eunotus*.

Xenopelte couridæ, sp. n.

Black, the legs pallid yellow, the femora and tibiæ more or less infuscated, the antennæ testaceous; wings hyaline, the nervures dark testaceous. Female. Length, 1-1.50 mm.

Bred from galls on leaves of *Courida*. Head and thorax shining, aciculated, the scutellum finely, closely transversely striated, its apex broadly rounded, and with a distinct margin or keel; the upper part of the head and thorax covered with a microscopic white pile, which is denser on the metathorax. Basal segment of abdomen raised, short, testaceous, the 2nd is finely microscopically punctured; the apical are sparsely covered with white hair, the ovipositor is moderately broad and shortly projects; the abdomen is longer than the head and thorax united.

In one example the coxæ and abdomen are fuscous; this may be through immaturity

PTEROMALINÆ.

Æronea gen. nov.

Antennæ 13-jointed, as long as the head and thorax, thickened towards the apex, but not much and gradually so; placed shortly below the middle of the face and of the eyes, which are large and parallel, neither converging above nor below. Head large, clearly wider than the thorax; the occiput widely roundly incised. Prothorax small, the apex transverse, raised. Mesonotum short, wider than long, as long as the scutellum, without furrows. Scutellum longer than wide, the apex rounded. Metanotum short, the basal central part finely, closely striated, opaque, this part having a longitudinal oval fovea on the outer edge; the outer part is smooth, has an oval fovea at the base and a triangular incision at the apex; the apex is broadly roundly raised in the middle and has a transverse fovea on the sides. Abdomen sessile, shorter than the thorax; its 2nd segment is longer than the 1st and longer than all the others united; the ovipositor shortly projects. The submarginal nervure about one-half longer than the marginal; the postmarginal one-fourth shorter than the latter and one-third longer than the stigmal vein, which is oblique and dilated at the apex.

The wide head and mesonotum, the absence of parapsidal furrows and the 3 foveæ on the sides of the metanotum are the characteristic features of this genus of *Pteromalinae*.

Æronea laticeps, sp. n.

Head and thorax dark bronzy black, the vertex and front laterally tinged with blue; the abdomen bright bronzy black, the base, sides apex and ventral surface bright metallic blue; antennal scape and pedicle fulvo-testaceous, the flagellum black, densely covered with white pubescence; legs yellowish testaceous, the femora for the greater part black, the hinder more completely so than the others. The head and thorax bear distinctly separated white hairs, the head with them shorter and closer than the thorax. Head finely, closely punctured: the mesonotum and scutellum much more strongly reticulated. Base of scutellum wide, not much narrower than the apex; the basal furrow deep, transverse, the lateral oblique furrows narrower. Tegulæ paltestaceous. Female. Length, 1.5-2 mm.

“On a Syrphid pupa.”

Pro- and metapleuræ smooth, the latter with a large fovea down the centre of the base, the lower part closely punctured; the mesopleuræ closely reticulated.

Pteromalus couridæ, sp. n.

Head dark blue, the pro- and mesothorax black, tinged with purple, the metathorax green, the abdomen black tinged with purple, the base and sides of 1st segment green, the green on the sides becoming gradually narrowed; legs yellow, almost white, the greater part of the femora black, more or less tinged with fuscous, the coxæ black to near the apex; antennæ with the pedicle and scape yellowish testaceous, the rest darker testaceous, blackish above, the pedicle pyriform, twice longer than it is wide at the apex, the 3rd joint one quarter longer than the 4th; the last three form a not very clearly separated club: the antennæ are slightly longer than the head and thorax-united. Head closely, finely punctured, more strongly on the vertex than elsewhere; the front bearing on the sides, white scattered hairs. Pro-notum finely, closely, the mesonotum more strongly transversely striated, the striæ more or less intertwining; those on the lateral lobes finer and forming almost reticulations. Scutellum, finely, closely, reticulated. Metanotum shining, smooth, the middle raised, bordered by keels, the sides (they are larger than the central part) bordered by a keel which curves inwardly at the apex. Wings clear hyaline, the nervures pallid testaceous; the marginal and post-marginal nervures are of almost equal length the stigmal branch fully half their length, its apex triangularly dilated. Abdomen fully as long as the head, and thorax united, from the middle becoming gradually narrowed to a fine point the apical segments fringed with white hair. Female. Length, 1.5 mm.

Bred from galls on *Courida* leaves.

Ocelli in a curve, the hinder separated from each other by almost double the distance they are from the eyes. Occiput almost transverse, the temples very slightly developed.

RHAPHITELINI.

Oluspa, gen. nov.

Head wider than the thorax, the eyes large, longish oval, parallel, not converging, widely separated; the ocelli placed in a curve, the hinder on the edge of the vertex; occiput almost transverse, the temples very little developed; malar space two-thirds of the length of the eyes. Antennæ placed almost in the middle of the face, opposite the end of the eyes. The front is very little depressed, the antennal furrow shallow, narrow. Antennæ 12-jointed the scape does not reach to the ocelli; the pedicle is more than twice longer than wide, the ring joints narrower than it and half its length; the apical joints do not form a club. Pronotum distinct, clearly separated from the mesonotum, which has weak, oblique furrows on the basal half. Scutellum large, nearly one-half longer than wide, the base transverse, bordered in the middle by a wide furrow; the apex broadly rounded. Metanotum keeled down the middle; the sides seen from above form large triangles. Abdomen sessile, as long as the thorax, the apex narrowed to a sharp point. Base of mesopleuræ depressed to near the middle, the raised apical part with a triangular depression above the middle. Legs normal; the spur on the hind tibiæ distinct. Wings shortly ciliated round the edges, the marginal nervure about one-third shorter than the basal, which is dilated at the apex; the post-marginal is slightly longer than the stigmal branch, which is a little dilated at the apex. The front femora are thicker than the others, especially in the middle. The clypeus forms a depression, rounded above; the apex transverse; there is a keel in the middle of the face.

Belongs to the *Rhaphitelini*—I cannot refer it to any of the described genera in that group. In Ashmead's system it runs near to *Rhaphitelus*. The occiput is narrower, more transverse and the temples less developed than in that group, the 2nd abdominal segment is smaller being not much longer than the 3rd. Characteristic are the ocelli placed in a curve on the extreme outer edge of the vertex.

Oluspa albopilosella, sp. n.

Dark blue, the head and upper part of thorax darker, more bronzy in tint, the back of the abdomen except round the edges dark bronzy; the antennal scape and pedicle rufo-testaceous, the rest of the flagellum dark fuscous, densely covered with white pubescence; the head and upper part of pro- and mesothorax with the scutellum sparsely covered with distinct thickish white hairs; legs whitish yellow, the four front coxæ blackish except at the apex, the hinder metallic blue, the four front femora largely fuscous above and below, the hinder black, tinged with blue from the base to near the apex; wings hyaline, the nervures pallid testaceous. Female. Length 2 mm.

Bred from pupæ found in fruit of *Cardiospermum halicacabum*. Head finely, closely, regularly punctured, the occiput finely closely transversely striated, the striæ roundly curved. Propleuræ smooth, the depressed base of mesopleuræ finely, regularly, closely reticulated, the lower apical part more

finely reticulated, the raised upper part smooth. Metanotum smooth, the outer edge finely aciculated—The colour on the top of thorax is tolerably uniform; on the pleuræ the blue is largely mixed with violaceous.

The scattered white hairs on the mesonotum are very conspicuous; the apical abdominal segments are fringed with white hair.

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APHELINÆ.
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Triolynx, gen. nov.

Antennæ placed nearly opposite the lower part of the eyes; 8-jointed, the scape not reaching to the middle of the eyes, compressed below, roundly narrowed at the base and apex, the pedicle bare, shining, narrowed at the base, twice longer than wide, as long as the following joint which, with the next, is a little longer than wide, the following as wide as long; the apical three form a well-marked, clearly separated club, wider than and as long as the preceding three joints united, rounded at the base and gradually narrowed towards the apex. Eyes large, oval, pilose; the malar space as long as the antennal pedicle. Ocelli in an equilateral triangle. Clypeus narrowed in the middle the sides roundly dilated. Occiput transverse; the temples very short. Parapsidal furrows complete, curved. Scutellum nearly as long as the mesonotum, transverse at the base, roundly narrowed towards the apex, twice longer than it is wide at the base; there is a distinct furrow down its middle. On the lower part of the mesopleuræ is a clearly defined longitudinal furrow, which is placed higher up at the base than at the apex. Marginal nervure twice the length of the basal; the stigmal branch much shorter than the post-marginal; 2nd abdominal segment as long as all the following united, the apical two gradually narrowed to a blunt point.

The pronotum is half the length of the mesonotum; it becomes gradually widened towards the apex. The head is wider than the thorax; the abdomen is slightly longer than the thorax; the metapleuræ at the apex project into a triangular point. Tibiæ unarmed.

Belongs to the *Aphelininæ*, tribe *Aphelinini*. It cannot well be confounded with any of the described genera; the clearly defined, three-jointed antennal club, the hairy eyes, very long marginal nervure and the furrowed scutellum are four points which should enable it to be easily recognised. In Ashmead's Arrangement (Mem. Cairn Mus. i, 345) it runs close to *Aneristus* How.

Triolynx clavicornis, sp. n.

Blue, the head darker coloured than the thorax, the 2nd and following segments of the abdomen black, the antennal scape pallid yellow, the flagellum densely covered with longish white pubescence, the legs pallid yellow, covered with a white pile, the coxæ blue. Wings hyaline, the nervures pallid; the edges ciliated, the ciliæ longer on the base of the costa. Female. Length, 2 mm.

Bred from Limacodid, *Phobetron hipparchia*.

Head closely, not very strongly punctured, the vertex sparsely covered with longish black, the front with shorter white hair. Thorax: the pronotum almost smooth; the mesonotum and scutellum closely, regularly distinctly punctured, the scutellum slightly more finely than the mesonotum, the pleuræ smooth and shining as is also the metanotum, which has a wide rounded keel down the centre, bordered by wide, deep furrows, rounded on the outside.

ENTEDONINÆ.

TETRACAMPINI.

Akonda, gen. nov.

Antennæ 10? jointed, placed immediately over the clypeus and below the eyes, the last joints forming a club. Eyes pilose, the malar space one-third of their length, obliquely narrowed to the mandibles. Temples short, roundly narrowed. Ocelli in a wide triangle. Pronotum distinct, roundly narrowed to the base. Mesonotum with the parapsidal furrows only indicated on the apical half. Scutellum large, wider than long; transverse at the base, roundly narrowed at the apex. Metanotum semi-circular, large, the sides margined, a finer keel down the centre. Submarginal vein short, narrow, thickened at the apex, one-fourth of the length of the marginal, which is longer than usual; post-marginal very short, the stigmal is as long as the latter, placed close to it and dilated at the apex. 1st abdominal segment as long as the following united, broad at the base, longer than it is wide at the apex, cup-shaped; the other segments become gradually narrowed to the apex, and are of about the same length.

The flagellum is stout, the joints wider than long, but not much, the scape distinctly narrower than it. The lower part of the mesopleuræ is widely depressed.

Belongs to the *Tetracampini* and comes, of the known genera, nearest to *Tetracampe*, from which it may be known by the pilose eyes, more sessile 1st abdominal segment and much shorter post-marginal nervure.

Akonda hipparchia, sp. n.

Blue, the apical half of the abdomen (from the apex of the 1st segment) black tinged with violaceous, the antennal scape and the legs whitish yellow, the coxæ blackish blue; antennal flagellum black, pilose; wings hyaline, the nervures pallid testaceous. Sparsely pilose, smooth, except the mesonotum which is finely closely reticulated. Female. Length, 1 mm.

Bred from Limacod *Phobetron hipparchia*.

PROCTOTRYPIDÆ.

SCELIONINÆ.

Trissolcus metallicus, sp. n.

Head and thorax dark or bright metallic green or blue, the pleuræ violaceous, the front, vertex and occiput mostly black; the basal half of the dorsal surface of the abdomen and the ventral surface, except at the apex, rufo-fulvous; antennal scape fulvous testaceous, the flagellum dark fuscous, almost black; legs fulvous testaceous, the base paler coloured; wings hyaline, the nervures testaceous; the apex is distinctly ciliated and the surface is pilose; when folded along the back they extend the length of the abdomen beyond its apex. Abdomen sessile, broad at the base—broader than the thorax—becoming gradually narrowed to a blunt point at the apex. Female. Length. 75 mm.

“Egg-parasites,” but it is not stated to what order of insects the eggs belonged.” Probably they were Hemipterous, as some species of *Trissolcus* have been reared from the eggs of bugs.

Antennæ as long as the body, slightly, gradually thickened towards the apex; the pedicel is narrowed towards the base and is twice the length of the 2nd, the following five or six are longer than wide, the others wider than long. Smooth, shining, sparsely haired; parapsidal furrows fine. Scutellum large, flat, almost semi-circular. The eyes are very large, converge slightly, but distinctly at the top, where they are separated by about the length of the basal two joints of the flagellum united.

Telenomini.

This group consists of minute insects which lay their eggs in those of others, chiefly *Lepidoptera* and *Hemiptera*.

Phanurus longiventris. sp. n.

Black, shining, the antennal scape, pedicel and legs rufo-fulvous; wings hyaline, the nervures pale fuscous, ciliated; the antennæ in both sexes densely pilose, the pile longer in the male the antennæ in female shorter, in female longer than the body; the last five joints in female thickened, forming a not very distinct club, the basal three joints of flagellum (3rd-5th) longer than the others. Head smooth, shining, the ocelli forming a large equilateral triangle, the hinder placed close to the eyes. Mesonotum opaque, closely punctured, its apex closely striated, thickly covered with white pubescence. Scutellum more shining, almost smooth, the apex with a crenulated furrow. Metanotum short. Abdomen nearly three times longer than the head and thorax united, its base raised into a

large, oblique, rounded tubercle, its sides closely strongly striated, the striae curved roundly; the base of the 2nd segment has a striated border; it is much longer than any of the others, twice the length of the 1st. The abdomen becomes gradually narrowed to a fine point.

The male is similar, differing only in the longer, non-clavate antennæ and in the shorter abdomen which is as long as the head and thorax united, it is broader, not narrowed to a point at the apex, but forming a longish oval. Female. Length 2.5, Male 2 mm.

The specimens are labelled "Bred from egg-sack of mantis?" If correct this would be a new host. for the group-species of other genera are known, however as parasites in the eggs of Orthoptera.

Telenomus pulchricornis. sp. n.

Black, the antennal scape and the basal four or five joints of the flagellum rufo-fu'vous, the legs pale rufo-testaceous, the wings hyaline, the nervures pale testaceous; the apical five joints of antennæ form a distinct club, thickened wider than long, the joint at its base narrower, more transversely ovate, wider than the joint at its base. Head smooth and shining, distinctly wider than the thorax. Eyes large, parallel. Ocelli in a wide curve, the hinder placed at the extreme edge of the vertex, touching the eyes. Mesonotum opaque closely punctured, thickly covered with short white pubescence. Pleuræ smooth, shining, the apex of mesopleuræ crenulated. 1st abdominal segment strongly striated the base of the 2nd with a narrow crenulated border, the abdomen is flattened, broadly ovate, not much longer than the thorax. Female. Length, a little more than 1 mm.

Antennæ thickly covered with white pubescence. Looked at from behind the mesonotum is seen to be striated at its apex. Scutellum very smooth bare and shining, margined behind by a crenulated border, just before its apex; post-scutellum continuous with this, opaque, finely rugose. The 1st funicular joint twice the length of the pedicle; the flagellum twice the length of the scape.

The specimens are marked as being reared from eggs of "plant bug."

Telenomus dilophonotæ. sp. n.

Black, the apex of coxæ narrowly, trochanters, base and apex of tibiæ and the tarsi whitish yellow; wings hyaline, the nervures pallid testaceous. The antennæ are not quite black, having a fuscous tint, the apical joints, forming the club, are clearly separated, the basal one smaller than the others, the apical conical, the others wider than long, the basal 32 joints of the flagellum longer than wide, the others shorter, as wide as long. Smooth shining, almost bare; the eyes large, projecting. Abdomen longish ovate, longer than the thorax, its basal segment slightly wider than long, striated, the segment entirely smooth. Female. Length hardly 1 mm.

Probably the amount of black on the legs varies. The apical joint of the tarsi may be black. Bred from eggs of the hawk-moths, *Dilophonota ello* and *Anceryx caicus*.

Telenomus atripes, sp. n.

Black, shining, the knees and tibiæ and tarsi testaceous, the apex of tibiæ infuscated, the rest of the legs fuscous rather than black, the antennæ dark testaceous, the apical four joints forming a not very distinct club, the basal three joints wider than long, the apical conical, longer than wide, the pedicle almost twice longer than wide, narrowed at the base, the middle joints are slightly wider than long, transversely oval. Wings hyaline, the nervures pale testaceous; the edges are distinctly ciliated. Female. Length, $\frac{1}{2}$ to $\frac{3}{4}$ of mm.

Bred from eggs of a Noctuid ("cutworm.")

Head distinctly wider than the thorax, which is longer than the abdomen. The colour of the legs varies, they may be almost entirely black; the fuscous runs into black.

SCELIONINI.

Macrotelia erythropus, sp. n.

Black, the legs red, the antennal scape of a slightly darker red, the apex slightly and narrowly blackish, the 2nd and 3rd joints piceous, the 4th and 5th of a darker piceous colour below; wings clear hyaline, the nervures pale fuscous, the stigmal branch more than twice the length of the marginal. Abdomen one half longer than the head and thorax united, the lateral keel stout, shining. Mesonotum with a furrow down the middle; this furrow is wider at the base, through the sides being obliquely sloped. Scutellum bordered by oblique, clearly defined furrows and with a triangular fovea in the centre of the basal half. Tegulæ piceous. Densely covered with white pubescence. Sides of apical abdominal segment projecting into long spines above. Male. Length, 4 mm.

A stout keel runs down from the ocelli and is continued down the sides of the frontal furrow; it is bordered on both sides by three stout oblique keels. Centre of vertex irregularly finely rugose; there are three stout oblique keels on the sides, the lower sides curved. Eyes margined. The outer orbits on the inner half with two rows of foveæ formed by stout keels. The occiput margined with a crenulated border on the innerside. Pronotum smooth, the apex margined by a keel which runs down the pleuræ shortly behind the middle, the upper (and longer) part there being roundly curved. The upper apical part of the propleuræ is coarsely reticulated bordered below by a rounded keel; in the centre of the lower part are 2 keels, dividing it into four parts. There is a keel down the centre of the mesonotum, the parts on either side of it being depressed. Base of mesopleuræ stoutly, longitudinally striated. Post scutellum bordered by stout curved keels; the part on either side crenulated stoutly and bordered by a keel; the base of the metanotum is bordered by a

stout keel, roundly curved laterally ; it forms on the sides with the keel at the the post-scutellum a longish triangular area, the narrowed end on the inner-side. The lower part of the mesopleuræ is bordered by a stout keel which commences at the base higher up and is there roundly curved ; there is a row of irregular foveæ down the apex.

Hadronotus leviventris, sp. n.

Black, the antennal scape, basal two joints of flagellum and the legs, except the coxæ, rufo-testaceous ; wings hyaline, closely ciliated, the nervures pallid testaceous. Female. Length, 1.5 mm.

Bred from eggs of plant bug."

The apical five joints of the antennæ form a stout club, clearly separated from the basal joints, its four basal joints are wider than long, the last thinner, longer than wide, conical. Head clearly wider than the thorax ; aciculated opaque, with scattered punctures. Eyes large, projecting, slightly converging above. Temples very little developed. Oeciput broadly, roundly incised. Ocelli in a wide curve, the hinder close to the eyes, the central in the middle. Frontal depression deep, of equal width, closely somewhat strongly striated. Malar space longer than the eyes, roundly narrowed below. Mesonotum on basal two-thirds closely reticulated-punctured, the centre of the apical third bordered by furrows, irregularly, weakly striated and somewhat reticulated. Scutellum coarsely reticulated. There is a wide crenulated border on the base of the metanotum, the rest of which is irregularly reticulated. Base of propleuræ depressed, striated. There is a curved striated border on the base of the mesopleuræ, bordered by keels. Metapleuræ irregularly reticulated, more closely at the apex than at the base. Base of abdomen closely crenulated margined at the apex by a keel ; this is followed by a crenulated depression. The abdomen is shorter than the thorax, it is flat, longish oval ; the 2nd segment is larger than the others, wider than long,—and longer than all the following united ; the sides and apex are fringed with long, white hairs. Mesonotum densely covered with short white hair.

DIAPRIINÆ.

SPILOMICRINI.

Hoplopria, Ashm.

I refer two species in the collection to this genus. They are very different in structure, but the male fits in with Ashmead's descriptive of the male the only sex he describes, The Guiana female has 13-jointed antennæ, which have a 5-jointed club ; the base of the thorax is roundly narrowed, not transverse and forming a clearly separated collar as in the male ; the parapsidal furrows are wide ; there are 2 longish oval foveæ at the base of the scutellum, the abdominal petiole is about 3 times longer than wide and is strongly keeled above and laterally below. The collar, metathorax and abdominal petiole are thickly covered

with white pubescence. The temples are longer than in the male and are slightly, roundly narrowed. *H. curvispina* may form the type of a new genus; the narrowed transverse thorax and with it clearly separated, by being narrowed, from the mesonotum is different from what it is in the other genera, in which the base of the thorax is roundly narrowed.

Hoplopria curvispina, sp. n.

Black, shining, the greater part of the 2nd ventral abdominal segment rufo-piceous, legs of a darker rufo-piceous colour, the thickened part of the hind femora and the hind tibiæ and tarsi fuscous, the head and pronotum sparsely covered with longish fuscous hair; the metapleuræ, metanotum and petiole densely covered with long white pubescence, wings hyaline, slightly tinged with fuscous, highly iridescent, the nervures black. Post-scutellar spine large, broad at the base, the upper narrowed part thinner, but stout, curved, the apex with the lower part forming a broad, rounded curve. Face below the antennæ forming in the centre a flat plate, gradually roundly narrowed to a sharp point at the apex, its centre slightly depressed; from it a keel runs down to the clypeus, its apex triangularly dilated. Occiput transverse, stoutly margined. Base of thorax transverse, narrowed, forming a distinct collar; from it to the tegulæ the mesonotum is roundly curved inwardly. Parapsidal furrows deep, complete and scutellar foveæ large, deep, longish oval. Spine long, triangular below as seen from the side, dilated, the spine above curved, behind forming a semicircle with the lower part. Pleuræ broadly margined below, the keel on the propleuræ stouter than on the mesopleuræ, the hinder half narrower than the anterior. Abdominal petiole about four times longer than wide of equal width, shorter than the 2nd segment; the rest of the abdomen forms an elongated oval. Antennæ as long as the body, hardly tapering towards the apex, densely covered with short stiff blackish pubescence. Abdominal petiole keeled laterally above and below and with 2 keels down the centre, the lower of these being stouter than the others. Male. Length, 3 mm.

The 3rd antennal joint is about one quarter longer than the 4th and is as long as the scape.

Hoplopria picicornis, sp. n.

Black, the basal eight joints of the antennæ dark rufo-testaceous, the base of the scape blackish, the apical five joints (forming a club) piceous; the scape bearing longish white hair, the flagellum more densely covered with shorter white pubescence; the greater part of the 2nd and 3rd ventral segments piceous; legs dark rufo-testaceous; wings not very clear hyaline, the nervures dark testaceous; the edges are fringed with long hair; the wings are pilose and very iridescent. Head sparsely, the collar more densely and the meta-thorax and abdominal petiole still more densely covered with long white hair. Female. Length, 3 mm.

The basal two joints of the flagellum are twice longer than wide, the 3rd, 4th and 5th about one-half longer than wide, these being all of equal width, the 6th longer than wide, oval, the next thicker, narrowed at the base, the

basal four joints of the club are wider than long, the basal joint longer than the others compared with the width, the last is longer and conical. Smooth and shining. Parapsidal furrows distinct a transverse furrow at the base of the scutellum, which at the base, bears two longish oval foveæ. Post-scutellar spine prominent, its base roundly curved, the apex curved at the top, the rest with a longish straight, oblique, slope, which extends to near the apex of the metanotum. Abdominal petiole more than twice longer than wide, a stout keel on either side of the top and another down the sides. The lower part of the pro- and mesopleuræ is bordered by a stout keel; down the middle of the metapleuræ are two curved keels, the two united by striæ; below and above them is a more irregular keel. The legs bear erect white hairs, the hind femora have the apical half clavate, much thicker than the basal.

END OF HYMENOPTERA.

(Since the last instalment of the Hymenoptera was published we have received the news of Mr. Cameron's sudden death at New Mills, Derbyshire, on the 1st December, 1912. His age was 65 and for forty years he has been known as a specialist in Hymenoptera. His earliest descriptions of new species were published in the Transactions of the London Entomological Society in 1876 and following years. Mr. W. F. Kirby in his list of Hymenoptera in the British Museum, Vol. 1, 1882, said:—

“I have to thank Mr. P. Cameron, of Glasgow, for types of several of his new species of Tenthredopsis.”

In 1882 he commenced the publication of a work in four volumes, entitled “British Phytophagous Hymenoptera.” This was issued by the Ray Society and is an authority for the class of insects dealt with. This was followed by the Hymenoptera section of the *Biologia Centrali-Americana*. The fact that he was selected as one of the specialists on this monumental work proves that his reputation in Hymenoptera was very high.

Of late years he was known throughout the world. His willingness to help was so conspicuous that many Museums and travellers sent him their collections. In a bibliography of Hymenoptera for the two years 1906-7 he is credited with thirty papers in journals published in England, Scotland, Germany, United States, South Africa and Ceylon. Every specialist took account of his work and it is interesting to note that Prof. Chester Bradley, of Cornell University, connected his name with an *Evaniella*, collected at Bartica by Mr. R. J. Crew. *E. Cameroni* was one of several new species described in a paper entitled “The *Evaniidæ*” published in the Transactions of the American Entomological Society, June, 1908.

By connecting the name of the late Rev. W. Harper with one of our new species he brings to mind the fact that Mr. Harper contributed to “*Timehri*” in 1888 a paper on The Beetles of British Guiana; he also wrote on Lepidoptera for the “*Argosy*.”)

PRESIDENT'S INAUGURAL ADDRESS.

JANUARY 29TH, 1913.

The President expressed his desire of saying a few words about the position of the colony. The past year had been one which increased their debt. He did not think that much to be wondered at when they considered the alterations which had been made in the building and the extra amount of comfort that had been provided for the members and associates. Consequently, as he had already said, they would have to go in for retrenchment. With regard to the Journal, he sincerely hoped that all the members and associates would try and buy copies. It was exceedingly interesting; it was more than that, it was exceedingly useful and during the last year many copies were sent abroad to various institutions with similar objects to their own and he felt sure that when those institutions recognised its usefulness they would ask that they be provided with one regularly. He hoped that it would help to advertise the colony.

Last year was a year which he thought very few of them would forget. It was a disastrous year, so far as agriculture was concerned, on account of the severe drought, a drought such as had never been experienced during the lifetime of anyone living in the colony to-day, and he sincerely hoped that they would not see such another drought for many years to come, if at all. It affected not only agriculture, because as they were aware if agriculture was affected it affected the general business of the colony, less money was circulated in the city and fewer importations were made. This year he hoped that, as the ground was said to usually benefit by a drought, the yield from the cane-fields would be larger than in previous years, and thus help on our sugar industry.

The rice industry, he hoped, would also do better this year than last and he hoped that we had seen the end of those experimental companies which had come to this colony, started, only lasted for a very short time and then went away. Companies of that character did far more harm than one imagined. They destroyed credit and also destroyed the belief in the colony as a good ground for investment. He hoped that during this year changes would take place which would prove beneficial in every way to the advancement of the colony. They had been waiting for a long time to see this advancement; in fact he did not know of any other colony he had visited which lived more in hope than British Guiana. But "Hope deferred, maketh the heart sick," and he was sure the hearts of the people must be sick of the weary wait. However, he believed that had all been changed. They were going to blossom out into a beautiful colony; well drained, well irrigated, with fine means of transportation and everything they could possibly want. He did not

say that he expected to see it all, but he expected to see some of these improvements. He remembered in that very room listening to an address by Sir Cavendish Boyle, when he told them that he could stay there and look with his prophetic eye, away over to the large savannahs between here and Brazil and see them covered with happy homesteads, and large factories in which the animals reared on those savannahs were reduced to Bovril or tinned meat. They were still hoping to see that. He believed that a good many more people had gone into the interior since then.

He hoped the time was not far distant when they would have Georgetown within a few days reach of Buenos Ayres and perhaps go there to see the Races. But outside of the sporting inducements in Brazil there were good inducements there in other ways. They had been hearing for a very long time of a railway to Brazil, but up to now they had not got it. At the present time there was a gentleman in the colony who represented a very good engineering firm and a financial firm too in the Homeland, and he was here with a view of placing before the Government a scheme, or schemes, for the construction of railways in the interior; it would be for the Government to say whether they would entertain those proposals and whether they were worthy of credence, or worth being looked into, and if so then they could place them before the Court. Nobody was coming to British Guiana for their health or for philanthropic purposes and they expected to get something for their work. So far as he understood the firm in question desired to give us good value for what we allowed them. In case of a question of guarantee by the Government, he believed the guarantee they asked would be a fair one. To-day they would not expect to raise loans at $3\frac{1}{2}\%$ per cent. with consols at their present price; consequently they would have to pay more than would have been paid a year or two ago. A railway to the hinterland without going to Brazil, would take a very long time before it could be productive. But in the event of a railway being run to Brazil arrangements could be made with the Federal Government not to put prohibitive duties on articles passing over the border. If they were going to get articles from Brazil for exportation then they would have to make necessary harbour improvements.

Harbour improvements and railway construction must go along side by side. They would require a large amount of money which could not be taken from the Colony chest, but must be raised by loan. The Panama Canal was now about to be opened and great preparations were being made by all the colonies. He did not know whether it would prove all that was expected of it, but they at least ought to benefit by it, and it behoved them to be up and doing, and not to sit with their hands in their laps. France had arranged to have harbour improvements in Martinique, and the Danes were at work improving the harbour at St. Thomas. They ought not to lag. They must hold their own. They had sat too long with their hands folded. Then if they were going to build a railway they must increase their labour supply and not take the labourers from the estates. There was a

good chance of obtaining mechanics from the Panama Canal, as the works were being closed down. Now was their chance to secure them. If they lost this opportunity he thought it would be a long time before another such would occur. There had been many lectures given during the past year and he hoped to be able to arrange for some more during the present year. Mr. Rodway had been giving some lectures to the children—Chats about Guiana—and he proposed to continue them. His next was to be about the ups and downs of the industries of the colony. He would like to hear it, but he thought it might be painful, there would be more downs than ups.

He thought the Society owed a great debt of gratitude to Mr. Nunan, the late President, who, he assured them, was not at all responsible for their financial position, which, on another occasion, he had described as a very healthy sign, because it showed that although they could not get money they could still spend it. He thought it was the same with the colony; it could not get money but it spent it. He again urged the members to do all they could for the Society. He referred to the Agricultural Committee and said that he proposed to call it together in the near future and let them elect a chairman, and then would formulate plans for the future. He again asked the members for their assistance.

The Society's debit balance on June 30th, 1913, was \$188.33 after defraying the large special expenditure of extension and renovation.
—(E.D.)

PROCEEDINGS OF THE SOCIETY.

Meeting December 30th, 1912. *Elections reported.*—*Members.*—Messrs. P. W. Morley and J. A. Luckhoo. *Associates.*—Messrs Jose A. Gomes, John Holiday, P. A. Duggin, J. C. Millar and P. C. Cox; *Lady Subscriber.*—Miss B. Jackson.

The Office-Bearers for 1913 were duly elected.

The Vice-President gave a short resumé of the Society's work during the year.

Meeting January, 29th 1913. *Elections reported.*—*Associates.*—Messrs. G. W. Thornett, John Carto, Karl Hayley, J. G. Gray, Thos. A. Phillips, (Revs.) Harold M. Yates and William E. Giddings; *Lady Subscriber.*—Mrs. Simpson.

The Honorary Treasurer's Statement for 1912 was laid over and two Directors appointed to audit the accounts. Owing to the necessary special expenditure in the improvement of the Society's premises and in modernising the Library a debt of something over \$1,000 had been incurred which the President believed would be soon cleared off. Part had been incurred in widely circulating the Colony Volume of *Timehri* for the purpose of advertising the colony. Until the balance had been restored the Society would be averse to special expenditure.

Certain obsolete by-laws were proposed for revision at the next meeting.

The President gave an opening address on the conditions of the Society and the Colony.

Donations: to Library—8 vols. books from the Bishop of Guiana; *to Museum*—autograph letters of the Duke of Wellington from Mr. S. G. T. Bourke and Rose wood and Rose oil from M. Prevot, Cayenne.

Meeting, April 16th, 1913. *Elections reported.*—*Member.*—Mr. Colin Rees Davies; *Associates.*—Messrs. Jas. Goulding, R. L. Hunte, Wm. MacFarlane, Reginald Lewis, Gerald Ambrose and G. H. F. Bennett, *Lady Subscribers.*—Misses W. M. Phillips and J. McKay.

The President spoke of the death of three prominent members, Mr. B. Howell Jones, Hon. George Garnett and Dr. F. H. Anderson. The Secretary was desired to forward letters of condolence to the families of the deceased gentleman.

The Honorary Treasurer's Statement for 1912 having been audited and found correct, it was adopted.

By-laws 1 and 4, Chap. VI., and 1 and 2, Chap. VII., were amended and 3 to 9, Chap. XII., rescinded.

Donations: to Library.—Eigenmann's Fishes of Guiana from Mr. B. S. Conrad, 12 vols. books and 12 periodicals from Hon. J. J. Nunan; *to Museum.*—29 insect pests from Mr. G. E. Bodkin.

Prof. L. S. Austin read a paper on Economics of Gold Mining. His Excellency the Governor spoke of the value of the paper and the President called attention to the difficulties of gold-mining. A hearty vote of thanks was unanimously accorded.

Meeting, July 30th, 1913. *Elections reported.*—*Members.*—Rev. D. Duffus, Messrs. Michael A. Esch, and C. K. Bancroft; *Associates.*—Messrs. F. J. de Freitas, H. S. Cox, A. Mitchell, A. G. Bowers and H. P. Weber; *Lady Subscribers.*—Misses Clara Smith, Effie Newsam and E. Fernandes.

The Vice-President (Hon. J. J. Nunan) spoke of the services to the colony of Sir Charles Cox, and of his intention to have that gentleman proposed as an Honorary Member.

Mr. Nunan said ;

“Last July, when Sir Charles Cox who had been Vice-Patron of this Society during the eleven months of his last acting régime as Governor was going on leave the fourteen directors of this Society presented him with an address of which a framed copy now hangs over the principal entrance. Part of it read as follows :

‘The members of the Society have fully recognised the unassuming devotion to public duty, the unobtrusive industry, the well-balanced judgment and the marked administrative capacity which you have brought to the problems of Government. Of such problems you have had your full share and we feel that the colony owes a great deal to your wise and effective administration in 1906 and in 1911-12, periods of trial which are fortunately infrequent.

‘The catalogue of your services would be a long one and we are confident that as the years pass their permanency will cause them to be appreciated more and more. We rejoice that they should have been rendered by one who, a West Indian born, has been brought up from his school days here in our midst, who enjoys the individual respect and regard of all our citizens, and whose success furnishes an example and an incentive to every member of the Colonial Civil Service.

‘We can only conclude by wishing you and Mrs. Cox a pleasant voyage to the Mother Country, an enjoyable holiday after having so long and so creditably borne the burden and heat of an administrative interregnum, and a safe return to the colony, which looks to you for many further years of such services as can only be performed by one of your mature experience and of your profound acquaintance with its needs.’

Unfortunately, the colony is losing him at a time when it can least afford to forego the services we had hoped for. But the doctors have told him that a further struggle to render them, for the struggle was valiantly made, would mean his death-warrant. We are sorry to see him go and feel it as a personal loss. He was a strict observer of the constitutional rights of the citizens of this colony, both in the letter and

the spirit and nobility was more unlike an Oriental satrap in his administration. Yet we all felt the steadying effect of his control during the troubled season which followed the riots in 1906 at which time I first became associated with him and learned to love and respect him.

It is some consolation to think that the Colonial Service is not unfruitful in officers of his type who are proud to make the boast of the great hero king, Henry V.:

‘ This is the British not the
Turkish Court
Not Amurath to Amurath
succeeds
But Harry Harry.’

I have great pleasure in giving notice of my attention to propose Sir Charles Thomas Cox, K.C.M.G., as an honorary member of this Society.

A letter from Mrs. Garnett was read thanking the Society for their kind sympathy with her in her great loss.

The Vice-President introduced the question “Can the Colony be developed without increased taxation? His Excellency the Governor as Chairman called upon members to give their views and in response Messrs. E. G. Woolford, G. Russell Garnett, L. P. Hodge and the Hon. C. F. Wieting spoke on the question. His Excellency the Governor concluded with an interesting outline of the course to be taken in developing the Colony and of the difficulties to be encountered.

CHATS ABOUT GUIANA.

November 29th, 1912. The second, entitled “Old Times” was delivered to a large number of school children and some members of the Society. Mr. T. A. Pope, Vice-President, occupied the chair. The lecturer spoke of the difference between the conditions in town and country in early times and compared them with the present. Special reference was made to the sanitary arrangements, roads and drainage of Stabroek and the growth of Georgetown. A series of lantern slides gave views at different periods commencing with native Indian villages and coming down to about fifty years ago.

February 6th, 1913. The third entitled “Ups and Downs,” being without lantern illustrations, did not attract such a large audience. The President, Mr. J. B. Laing, occupied the chair. The lecturer surveyed the course of trade and settlement from the beginning, the rise and fall of Indian trade, cotton, coffee and sugar. The prosperity of the colony had been mainly due to capital and labour; when these were deficient no progress could be made. Prices naturally made differences in the profits; sugar survived when the low prices of cotton and coffee put these in the background. Two diagrams illustrated the “chat”; one showed the districts cultivated at different times, the other three centuries of ups and downs.

APPENDIX I.

His Excellency's visit to the Rupununi savannahs has revived many of the anticipations of developments which his arrival in July, 1912, aroused among the people of this colony. Some of the articles in this number and most of those in the two special numbers which make up the Colony Volume show the nature of these anticipations as regards colonization, irrigation, drainage and railway construction. As the reception given to His Excellency by this Society was the most comprehensive demonstration of the Colony's welcome to the new régime we are acceding to the expressed wishes of many of our readers by publishing an account of it which would otherwise be inaccessible except in a newspaper file. We are indebted for it to the columns of the *Daily Argosy*.

R. A. & C. SOCIETY CONVERSAZIONE.

SIR WALTER AND LADY EGERTON AT SUCCESSFUL FUNCTION.

GOVERNOR'S SPEECH OF ENCOURAGEMENT TO SOCIETY.

The Rooms of the Royal Agricultural and Commercial Society were the scene of a brilliant function on Wednesday evening, July 10, 1912, when a conversazione in honour of Sir Walter Egerton, the new Governor, and Lady Egerton was held. There was a large and influential audience, and the proceedings were characterised throughout by the most cordial spirit, the good feeling shown towards the distinguished guests of the evening being particularly noticeable.

For the occasion the Rooms and the Museum were specially illuminated, and outside the building the words "God Save King George V., our Patron" were picked out in dazzling electric lights.

When His Excellency and Lady Egerton, attended by Lieut. Napier, the Governor's Aide-de-Camp and Private Secretary, drove up, there was a large crowd of people in the vicinity of the premises, and they gave Sir Walter round after round of hearty cheers.

On entering the Lecture Hall His Excellency was cordially received by the audience, and the National Anthem was played on the pianoforte by Mrs. Stephenson.

Among those present were the Bishop of Guiana and Bishop Galton.

After a short musical programme. His Excellency and Lady Egerton were introduced to the assemblage by Mr. J. J. Nunan, Solicitor General, the President of the Society, in the following speech :

PRESIDENT NUNAN'S ADDRESS OF WELCOME.

Your Excellency Sir Walter Egerton, Lady Egerton, My Lords, Ladies and Gentlemen,—The principal object of our meeting here this evening is to enable the members of this historic Society to receive Your Excellency and Lady Egerton and to wish you both a hearty welcome to the colony.

The unprecedented manifestation of feeling which your arrival has already called forth from the community will have convinced Your Excellency that at the outset of your administration you have the goodwill, the sympathy and the support of everybody in British Guiana. These are good auspices for your régime and we believe that you will retain them undiminished to its close. They will have convinced you that your efforts for the colony and for the Empire of which, to use the words of Mr. Joseph Chamberlain, it is an undeveloped estate, will not be met in any quarter in any hypercritical or carping or niggard spirit. The public opinion which is growing here into no negligible force will take care of that.

Whatever failings our people may have, ingratitude for services rendered and lack of generosity for honest attempts to render service are not to be included. Our people, on the other hand, are very shrewd and rapid judges of character, and in the very short interval since your arrival have decided that if this neglected imperial asset is not soon to resume the march of progress the fault will not be in our stars but in ourselves. Your Excellency has very rightly reminded anybody who may wish to shift upon the shoulders of the administration the whole burden of the primal curse attending the inheritance of Adam, that,

“ Our remedies oft in ourselves do lie
Which we ascribe to heaven. The fated sky
Gives us free scope, only doth backward pull
Our slow designs when we ourselves are dull.”

But this colony expects to find in you an impartial and fearless leader, to receive from your government a ringing watchword of progress, and to secure with your aid the fullest consideration of all its legitimate ambitions.

In your stupendous task Your Excellency can always count upon the active support of this Society. Just now it is renewing its mighty youth and is making an effort to live up to the traditions of those times, more fortunate in some if not in all respects than ours, of which the memorials are borne in honour upon its walls. Its memories are going fondly back to the days of W. H. Campbell, Writer to the Signet, the learned and patriotic Scotsman who founded it in 1844, to the days of William Russell, who tapped the savannahs to supply the city and coast and river-side by one of the most interesting hydraulic feats accomplished outside of Egypt or Colorado.

They are going back to the days of many other enlightened, scholarly and public-spirited citizens of its fellowship, who in any public cause resembled those ethnic progenitors of so many of them, who made that proud reply to Alexander when he met them by the Danube or on the Dalmatian Hills more than two thousand years ago ; who said that they had no dread except that the sky might fail, that is to say, if I read the old Greek historian aright, that they feared not the face of man but only the anger of the gods. Those elders and pillars of the Society believed in this country of British South America. They were born in it or they made it their home. They were no rootless colonists of alien earth. We of this Society also believed in its certainty of happier fortunes and look to the day when under new conditions and ever-increasing number of those who earn their bread in this fair land, with its genial and healthy, even if on the coast somewhat relaxing climate, will regard it as their home and as their home adorn it.

Your Excellency has been kind enough to mark your recognition of our past work and of our possibilities of usefulness in the days that are to come, by accepting the office of Vice-Patron. At his accession His Most Gracious Majesty King George V. extended to us the high privilege of his patronage, following the example of King Edward VII. and of Queen Victoria, and indeed he has no more loyal subjects than in this colony, which treasures remembrances of his visit as a boy. Our Society has no narrow elective foundation, no restricted racial franchise. It includes not alone every leading planter, merchant and official in the colony but many gentlemen of the Northern and Southern European and American peoples, of the African, the coloured, the East Indian and the Chinese races and even if our actual roll of membership at the moment cannot show the name of any native American Indian, one of the most useful and reliable officers of our Museum is of the blood of the more ancient sons of the soil. It was from this vigorous stem that the Chamber of Commerce, the Planters' Association, the Agricultural Board and many other public institutions took their origin, and the stock to-day is no barren stock.

In concluding by bidding you both a hearty welcome in the name of the Society I can only express the hope that your stay here will be as happy as you can wish and that we shall often see you in our midst at the numerous gatherings which are held within these walls where you will always be assured of a cordial, a respectful and loyal welcome.

THE GOVERNOR'S SPEECH.

In reply, His Excellency, whose clear, musical voice was heard distinctly in all parts of the hall, said :—

Mr. Nunan, my Lords, Ladies and Gentlemen,—It is always very pleasing to be received so cordially as my wife and I have been to-night. We know that, at any rate, in this audience our limitations are recognised. I promise you that we will, both of us, do our best to help

forward the progress of this colony and aid, so far as we can, in its amusements as well as in its work. (Applause.) But I think that in the warmth of our reception to this colony there is something rather saddening. so far as the lower classes are concerned because it was borne in upon me when I went to visit some of the suburban districts that the people there seemed to think that there was no limit to what was going to be done. (Laughter.) I don't know who is responsible for that. I certainly am not myself. (Laughter.) If there is disappointment let it be put on the heads of those who brought it about. (More Laughter.)

You are a very ambitious Society. I think it would have been sufficient for most societies to have either represented agriculture or to have represented commerce. You have chosen to represent both—(laughter)—so that you almost represent the whole of the colony. I don't wish to decry the mining industry, but after all, the backbone of any colony should be agriculture and commerce, and I should think that if British Guiana has had a fault in the past it was in having put all her eggs in one basket. It is your duty as a Society to prevent that in the future, and to induce people to put their eggs into many baskets, and I am glad to see that there is another growing industry in the colony, and that is the industry of rice-planting. If you can only get the people to take that up as a peasant industry it ought to do a great deal for the country. I do not profess to be a wise man—but I come from the East. (Laughter.) In the East the rice industry is certainly the backbone of India, China and the great Malaya Archipelago, and I don't see why it should not be the mainstay of the people, at any rate in this country.

These are not the days when wealth, or even a living, is made easily. They are days of competition, and you want a society such as this to impress upon the people the necessity of advancing with the times and adopting new methods in order not to linger behind in the way of progress.

You have all heard of the hard times of the sugar industry, and you know the way in which that industry has been maintained. It has been by having new methods and new machinery introduced that the industry has been kept in the forefront of progress. (Applause.) It is your duty as a Society to introduce new products to the notice of the people, new methods of growing and preparing these products for the market, and I hope that together we may be able to do that very useful thing. (Applause.) You have, I have noticed with pleasure, recognised the very great importance of progress in agriculture, and the Legislature have not been niggardly in providing funds for agricultural experiments, if I am to judge from that very fine, large Botanic and experimental garden which I have had the pleasure of making a personal inspection of and of which I hope to make a very much more minute inspection along with its energetic and skilful Director.

Ladies and Gentlemen, I have, on behalf of my wife and myself, to thank you for the very cordial reception you have given us, and I only

hope that Mr. Nunan may be right when he says that when we go away we may not have disappointed you. (Applause.)

A specially interesting part of the programme was then proceeded with, numerous beautiful lantern slides of scenes in Georgetown and places on the way to Mount Roraima, by way of Wismar, Rockstone and Kaieteur Falls, being shown. The pictures, which were from photos taken by Sir Crossley Rayner (Attorney General) and Professor Crampton, of the American Museum of Natural History, were breezily described by Sir Crossley.

Thereafter the programme was resumed. It was sustained admirably by Mrs. J. B. Cassels, Miss Stephenson, Miss Downer (New Amsterdam), and Mr. H. Hill (vocalists), and Mr. Allan Webb (violinist), with Miss Nellie Simpson as the accompanist.

To these artists and to Sir Crossley Rayner hearty votes of thanks were accorded, on the motion of the President.

The conversazione proper then took place, an hour being very pleasantly whiled away in social intercourse.

The whole proceedings passed off most successfully.

APPENDIX II.

Correspondence.

September 15th, 1913.

SIR,

In my article "*Railways Ten Years After*" which appeared in your Special Colony Number for July, 1912, there was a short digression on the following theme: "We are treating the symptoms of our disease and not its cause. This colony in its struggle for life is not stripped for action." "It is useless to hold the executive to blame in what is virtually a self-governing colony. The Combined Court has called the tune." It referred to the consumption of the colony's resources in unproductive institutions, official and unofficial, steadily increasing in number, suitable to the four mile radius from Charing Cross but too expensive for an undeveloped and stationary, a poor but ambitious colony. They had grown with our growth and strengthened with our strength but had continued to increase with our diminution and waxed fat on our decay.

Incidentally the Borstal System as a supplement to Onderneeming School was referred to among other institutions by way of illustration of the ruling fads of the hour. I regret to learn from the Press of last

month that some at least of the members of a Committee appointed to look after the interests of the inmates on discharge resented the reference. I should be sorry to believe that any harm could accrue as no reflection was intended on the work of the Committee nor on that of the enthusiastic and worthy Superintendent of Onderneeming, Mr. Sydney Bayley. The work of reformation in any form has my heartiest sympathy. That it is a thankless and almost hopeless task under present local conditions is an individual opinion. It happens, however, to be shared by more than one of the Committee, who, I presume, only differ from me as to the advisability of openly saying so. In justice to the critics of the article I think it only fair to quote the official report for 1911-1912 by Professor Harrison on this subject :—

“ An enquiry has recently been made as to the number of discharged inmates that after leaving the institution have relapsed in their behaviour as judged by the records of convictions before the magistrates. Out of one hundred lads who left the School between November, 1907, and August 1912, fifteen have subsequently committed themselves. This indicates that 85 per cent. of the discharged inmates have not committed themselves and it is a fair inference that the training given to those lads at Onderneeming has been of benefit to them and to the community at large.”

If any considerable proportion of the 85 per cent. who have kept out of gaol for periods ranging from one to nearly five years can produce good conduct reports from employers for those periods I should be glad to reconsider my opinion. Perhaps the next Onderneeming report will supply this information as the employers have not appeared in print. For 1912-13 the record is still better. Of fifteen boys released only one went to prison during the year. A second was transferred as “ apparently irreclaimable whose influence was felt to be harmful to the other inmates.” It is satisfactory to note that the effect of the corrupt influence of vicious boys on each other is not ignored.

At the meeting in question it was proposed to alter the name of the Committee as the Borstal Institute had been shut down as a failure. Evidently the criticism that it was a useless and costly concession to that sentimental philanthropy which is producing its own Nemesis in the vast increase of crime in England, has been found to be borne out by the facts.

The digression concluded :—

“ Laws and regulations, the enforcement of which we resent, have come to be regarded by our people as progress. *Quid leges sine moribus?* Surgeon General Godfrey works hard and does his manful part, but he and his staff are as a voice crying in the wilderness. Our public health system is on paper, our infant mortality appalling, our population stationary and but for immigration declining, and the moral condition of the

masses is what is to be expected where no serious attempt has been made to erect a social system in place of that which slavery destroyed."

In your address Mr. Editor, as Acting President of the Royal Agricultural and Commercial Society, last month at which His Excellency was present you mentioned this passage and stated that Dr. Godfrey could not longer be called a voice crying in the wilderness. Owing to the interest of His Excellency the attitude of the community on public health questions had been altered since the article appeared. Mr. Harcourt's generous reference at the Corona Club dinner to Dr. Godfrey's work also shows the new state of affairs. As the writer of the article I am glad to endorse your remark. I should be equally pleased to see the acknowledged industry and capacity of Professor Harrison and Mr. Bayley crowned with success at Onderneeming.

The limitations of time and space do not allow me to deal with the subject as a whole but I trust you will allow me the hospitality of your columns in your next number for an article on "Prison and Reformatory Systems among Mixed Races in the Tropics."

I am, Sir,

Yours faithfully,

The Writer of "Railways, Ten Years After."

To the Editor-in-Chief
"Timehri."

APPENDIX III.

THE DEMERARA BAR.

Extract from Baron Siccama's Report 1879-1912.

(The original report to the Government has been republished by the West India Committee to which the thanks of the Colony are due. A commentary by Baron Siccama dated August, 1912, is attached.)

The rivers of Guiana drain only from plains or gently rolling hills overgrown with vegetation, and their clear though discoloured fresh water is only contaminated where the inflowing tide carries up the fine sea mud.

The clay found in the plains in long reefs or patches was therefore not brought down by the present existing rivers, but was deposited as

detritus from lands now submerged, and the alluvial plains of Guiana were made by the ocean.

The sea margins that one finds nearly parallel to the present shore, as far as they consist of clay, were the action of the ground wave rolling from the north-east on the shoaling mud bottom warping up banks that at last reached the surface.

The rivers only bring down sand and seem to deposit it chiefly parallel to their fairway and at their sides. The Corentyne and the Essequibo carry more sand than the Berbice and Demerara as evinced by the conformation of the shallows at their mouths.

Between these banks and the old shore lagoons would be formed, which, receiving the drainage from higher grounds, and intersected by rivers also adding their detritus and decayed leaves, would soon be covered with vegetation.

If the Atlantic waves at present were higher than they are, the same thing would occur again, and a new reef would form outside. As it is, the foreshore does not slope evenly, but undulates slightly, following the shore line. The water rising with the tide, and receding with the ebb, has a levelling tendency, however, and where it has the greatest velocity keeps the bottom deepest, in ratio of the quantity of water flowing over it. It is therefore important that the greatest possible volume of water should enter the estuary and flow out of it, and therefore the entrance should not be narrowed, and it is to be regretted that the last extension of the Best groyne should have been made to bear so much to the east. The encroachment of the stellings on the river has also a pernicious effect, as they act as so many silt catchers. They ought to be replaced by a continuous quay. At all events, instead of extending them any further, a limit line should be decided upon so as to form a straight line, and a channel could then be dredged so as to allow large ships to lay alongside these stellings.

As groynes have but a very local effect, it can hardly be expected that the east Best groyne would have deepened the bar. This bar is not what is generally understood by that word, that is, a bank in a river mouth formed by the river carrying down its own detritus and depositing it where it comes in contact with the open sea. What is called the bar here is really a deeper channel through the mud flats of the foreshore caused by the sea flowing in and out of the estuary.

In comparing the soundings of 1833, 1870 and 1879, on the bar, this has diminished in depth during the first period from 11 feet to 9 feet, and since 1870 to $8\frac{1}{2}$ feet, but has become wider. Whether the low water-marks of the different years were the same is difficult now to determine.

The stronger blowing of the N.E. trades than for some time previous, casting up more mud, are very likely the cause.

If it be intended to improve the bar by extending the Best groyne, this ought to be extended till the depth actually wanted alongside is reached, and in imitation of what is observed in nature, in direction opening up against the tide current. To obtain, however, a deep channel over the bar, dredging along this side of the jetty will have to be resorted to. The scouring of a new channel without it is at best hazardous and uncertain, even with a sandy bottom, and in many cases impossible, particularly in clay and silt, like in this case.

By laying a training dam in a direction so that it lies at an angle on the inflowing tide current, this will be deflected and led by it, and in that way keep the channel open. If no such training dam is made the incoming current and the draw of the Essequibo east mouth will sweep across the channel and tend to fill it up. On the outer edge of the bar this current exists during the whole flood time. Nearer the shore a set to the west is also perceptible after half tide, as then the Boerasirie channels begin to draw. This tide current is what has very possibly been mistaken for a littoral current, and to this the damage of the "Haarlem" front was ascribed. It has, however, always been at least two miles to seaward of the coast in front of "Haarlem."

The draw of the Boerasirie channels is only perceptible about "Uitvlugt" and "Leonora," and there exists only slightly and without attacking the coast-line.

For the reasons here above given, it is therefore advised that : 1st : The Pouderoeyen groyne be not further proceeded with, and that also the groynes on the sea wall should remain without further repairs, except the C groyne at the Fort, which should be strengthened. On the river front a "pierre perdue" protection will be more effectual than a groyne.

2nd. That the lines of stellings along the City waterside should be replaced by a continuous wall, as much as possible parallel with the fair way. If it is made to enter too far into the river at the Southern end, it would divert the scour from the frontage of "Ruimveldt" and "Houston" and form a dead angle at its southern extremity. In the immediate future, however, a line should be decided upon beyond which no stellings ought to be extended. Along this line and to the west of it a continuous deep channel should be dredged so as to allow of deep-going ships to approach the stellings. The site at present occupied by the Civil Engineer's wharf and adjoining lots would offer great advantages for the construction of a basin for Mail Steamers.

3rd. That the east Best groyne be extended from the end of the stone work due north to abreast of the groyne at the Fort, and then curving gradually to the east till it lies in a direction 40 deg. E. of N., and then in a straight line till it reaches 20 feet of depth at low water, so as to lie scooping on the rising side.

At Lusignan spit is at present forming, this seems to be the limit of the slewing change of the channel to the east, and the proposed direction of dam will leave sufficient room for the entrance to the fairway.

It is further proposed that along the east side of this training jetty the bottom should be dredged to 20 feet at low water, over a width of 250 feet, as this is believed to be a depth practically sufficient for the port. The ruling depth of the Suez canal is 25 feet, and 30 feet in the harbours.

The new canal of Amsterdam is of about the same capacity, but here the greater depth could only be gained at an increase of cost which the circumstances would not warrant. No second groyne is thought necessary, as it is believed that with one training dam the scour will be sufficient to keep the depth, aided by occasional dredging, and as a narrower channel would interfere with smaller craft beating out. The total length of this dam will be about 11 miles, but if constructed of branch mattresses in the manner as now executed in the Mississippi mouth and at Charleston, the abundance of that material in this Colony, leads to expect that the work might be done for a possible sum.

By utilizing the dredging of the channel, and building deep mattresses with pockets or gang boards, to be filled with this mud, two berme dikes with their top to low water can be laid, between which again other dredging material can be deposited, and the whole covered again by hand laid fascine work till the height of two feet above mean high water of spring tide be reached. The slopes of $1\frac{1}{2}$ to 1 must also be covered by rubble. By this mode of procedure it is believed pile work may be altogether dispensed with, relying only on dead weight. Old hulks may also with advantage be used.

A refuge harbour at the head of tugs and pilot boats will be useful. It may be advisable to begin at the sea end, so as to oppose the finished end to the direction of the sea waves. In beginning from the shore, the unfinished work being always opposed to the sea, would occasion much loss of time and material. An opening may be left some where near the West Bank to accommodate the Essequibo traffic wishing to enter the river. The silting up on the west side will, however, be very rapid, and therefore this opening will only be of temporary use.

In the estimate hereto appended the work is approximately estimated at \$3,000,000. It is, however, possible that by a judicious selection of dredging plant, and a cheaper mode of fascine work than hitherto usual, this amount may be diminished. The outlay may seem a large one, but the importance of the object renders it imperative that it should be considered.

At present the entrance to the port is inadequate for the character of the shipping frequenting it, and is tending to become worse. With a depth at low water of 20 feet, the port of Georgetown will be the finest in the West Indies. The largest merchant ships and steamers now afloat will be able to enter, and should a greater depth in after times be found necessary, nothing in the system herein projected will interfere with an enlargement of the channel.

For the present a width of 250 feet is deemed sufficient. The channel in the improved Mississippi South Pass was at first stipulated to be 300 feet wide and 30 feet deep under ordinary high water, but since the contractors have been bound to 250 feet only, as this was considered enough.

Should, however, the outlay to obtain 20 feet be too great, and a depth at low water of 15 feet be thought enough, a training dam on the same principle as above described should be laid to that depth at sea. The direction of this dam should, however, be more northerly, as in the 15 feet depth the current sets more southerly than further out, and the full advantage would not be taken, splitting the stream instead of intercepting it, by laying the dam, too parallel to the direction of the current.

It is estimated that this work will amount to about \$1,700,000 with a total length of dam of 16,000 yards, and the same width of 250 feet for the channel.

The works at present being carried out in the Mississippi and at Charleston may give experience to cheapen the work here proposed, and it is thought advisable not to enter into further details till investigations have shown whether the knowledge gained on the latest hydraulic works in the United States can lead to an improved and a simpler mode of construction.

H. SICCAMI,

M. Inst. C.E. Govt. Hydr. Engr

Georgetown, Demerara, 31st December, 1879.

Since the foregoing report was made many changes are noticeable. On Bouchenroeder's map of 1802, the centre line of the fairway from the Demerara river lies in a direction 8 degs. East of True North, with depths on the bar of from 9 to 11 feet. On the chart of 1872 the fairway over the bar lies in a direction 39 degs. East of North, with greatest depths of 8 to 8½ feet. On the chart as amended in 1888 the line of deepest soundings of 8 feet lies 58 degs. East of North.

On the chart of 1872 the position of the Lightship is shown due North of Cunnings Lodge on the Demerara East Coast; on that of 1888 this position lies due North of Montrose, a mile and a quarter further East; while in 1891 the Lightship had been again moved in an easterly direction but a little further inshore as the 3 fathom line had approached the mainland.

These changes are related to similar changes in the Essequibo River. On Bouchenroeder's map the greatest depths to enter the river

are shown in a pass between Tiger island and the mainland with soundings of 20 to 26 feet. In 1888 these were 12 feet.

In 1802 in the East pass of the Essequibo the depths of the bar are 8 feet, in 1888 these are 15 feet and the line of deepest soundings lies south of the Sugar bank, which continues to extend eastwards with a tendency to unite with Dauntless Island and the banks between these two, while the Red banks or Blue Jacket banks are slewing round to the south at their eastern parts.

All these changes show that the tide comes up from a more easterly direction and that the current entering or leaving the Essequibo flows partly over the Demerara bar and is the cause of this shallowing.

The deeper water out at sea is the cause of the waves running up higher on the Georgetown seawall than formerly. No information is at hand whether the spring-tides are now higher as shown on the scale at P.W. stelling in 1879. It may be that the seawall laid in 1882 has settled and wants raising.

As regards the estimate of 1880 this wants revising as the prices of labour and materials have considerably risen. On the other hand new methods of work and better machinery for dredging are obtainable so that in a round sum the estimate of \$3,000,000 for a leading dam and channel to the $3\frac{1}{4}$ fathom line will not be far out. The general direction of the dam can remain as proposed in 1879, except that the part between the shore and that further out should be laid in a curve of greater radius. Then, it is worth considering whether the use of concrete or fero concrete would be advisable from an economical standpoint. But this requires a serious study and a great deal more information of all sorts than is at present available.

The better to explain these remarks, a copy of the chart laid over with the report of 1879 is hereto annexed with the changes in the soundings obtained from notes made in 1891. On it is marked an amended proposal for the leading dam to be laid in the same direction but a little further to the North-West which will give a better entrance to the river and showing a gap or side opening for traffic to the Essequibo and islands.

Definitive plans can only be made after a thorough investigation of the present condition, but in principle the scheme of 1879 can be followed.

H. SICCAMA,

M. Inst. C.E.

THE HAGUE, August, 1912.

TIMEHRI:



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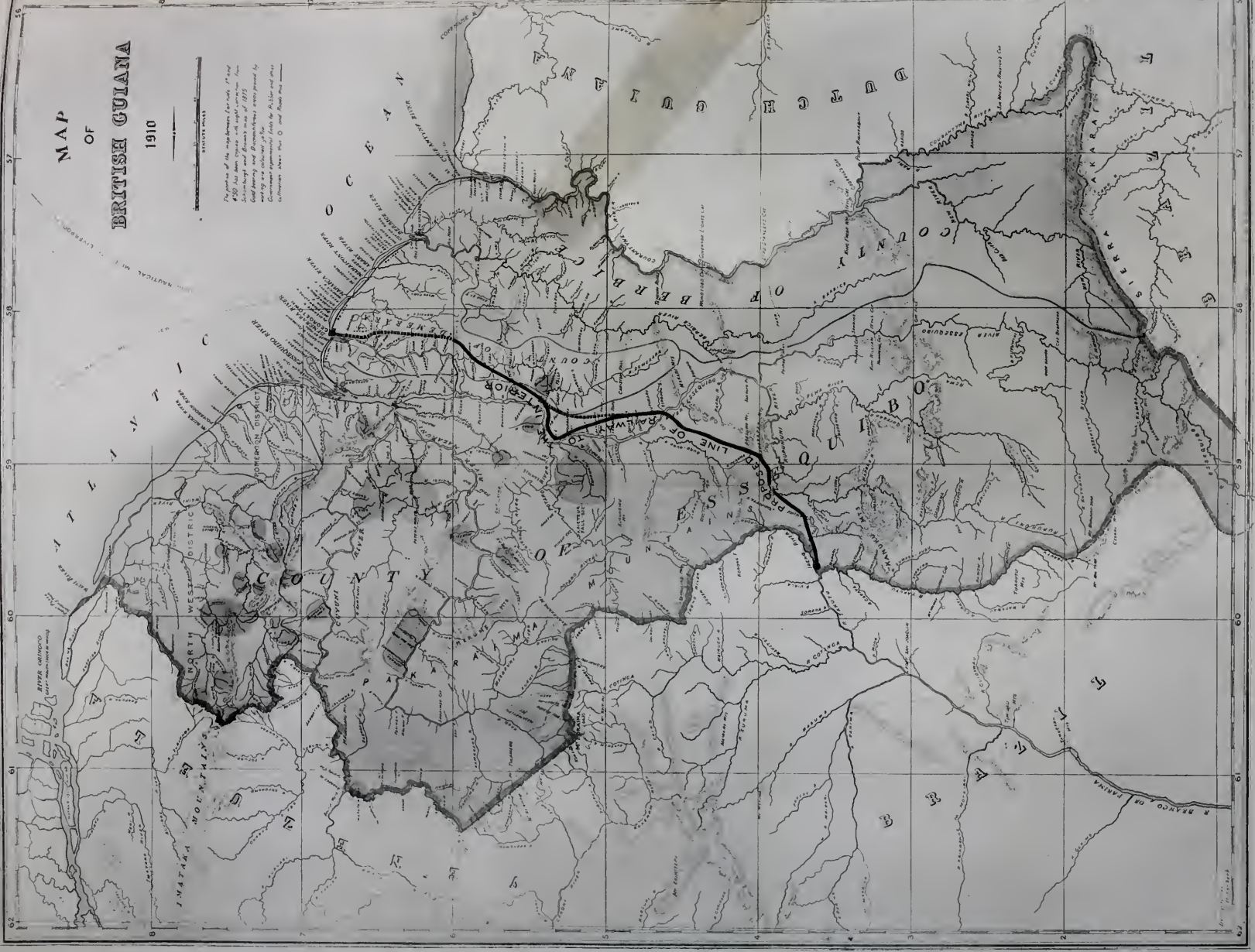
MAP OF

BRITISH GUIANA

1910

STATUTE MILES

The scale of the map between parallels 7° and 8° 30' has been chosen with special care. The contouring and drainage have been worked by the author, the names of rivers and creeks are taken from the Government reports made by Mr. Allen and other Commissioners since 1890. Contour lines have been drawn by Mr. Allen.



by means of profitable schemes that will pay at once. Well, there is one way I think which that could be done, and that is by carrying out judicious irrigation of suitable portions of the coast lands. We have asked and the Combined Court has granted the money,* and I have asked the Secretary of State to select an experienced irrigation engineer to advise on such schemes, but they are evidently not to be picked up in the hedgerows, for the Secretary of State has been searching for six months and has not yet found a man. May we take that as a happy augury that he is taking great care in the selection, and ultimately we shall get a very good engineer."

SAVING OF LIVES.

Mr. Nunan spoke of another way of retrenchment and it was a very important way, and that was in the saving of lives. Every life that died unnecessarily in the colony was a great loss; it was a loss of capital and they must try to reduce the death-rate and there was one encouraging thing about reducing the death rate, that wherever they were successful in reducing the death-rate they increased the birth-rate. At any rate that was the experience so far in tropical countries although in recent decades it had not been the case in Europe. The results of the census of 1911 came, he thought, rather as a shock to the colony. For reasons of economy for 20 years no census had been taken and it was found that there had been little increase during those twenty years. But he did not think that they quite got at the real causes of the unsatisfactory total. He believed that a good many people left the colony to seek a living elsewhere. He at once asked that question whether it was not so, and he was surprised to find that no one could answer it because no statistics were kept of immigration and emigration. He thought they had noticed that those statistics were being kept and as far as they had gone the figures seemed to show that a good many more people left the colony than came into it. He was leaving out East Indian immigration of course. Now, as to the question of development without taxation and as to the question of taxation itself. He must say he did not look upon the system as enforced here as perfect and he thought that on some points it did press unduly upon the lower classes. He was still learning in this colony and he did not venture to give any concrete instance at the present moment, but he had been thinking over the matter.

HIGH TAXATION.

There was also a very prevalent belief that this colony was very heavily taxed per head of the population. Well, it was very heavily taxed indeed, in the way of Customs duties, but not in other directions. He had had three distinguished Dutch visitors lunching with him that afternoon and one of them remarked to him "Your Customs taxation is very high." He said "Yes, it is, but there is very little behind it," and the visitor said, "Have you no income tax?" and he said, "No, we have not," to which the visitor replied, "Then I don't think your taxation is high." That was the way an outsider looked at it. Well, he should be

very loth to say that they could carry out a large scheme of development like the building of a railway to the far interior without an increase of taxation, but he hoped that such increase would be only for a term of years, and if he ever felt in the position of laying such a scheme before the public he should point out to them that the carrying out of any such scheme would open up new avenues of employment and the prospect of much more remunerative employment. And it would also open up the prospect of having something real to offer to people in other countries to induce them to come here. As he had stated he did not think that the coast lands were sufficiently attractive to people who were not accustomed to them, but he thought it might be a different matter if they had communication with the savannahs in the interior. There they would have lands similar to lands in other countries and he should say that any capitalist who interested himself in their development would not only be able to offer employment to people who could not find it on the coast lands, but he would also be able to attract people from the outside, to give only one instance—from Barbados. They knew how many thousands of Barbadians were willing to leave their island to work if only they could find remunerative employment, because they had gone in their thousands to Panama.

HINTERLAND RAILWAY PROBLEMS.

The question of this interior railway was a very difficult one. The first thing an opponent would say was, having made your railway what traffic are you going to get from it? Well, he was afraid all they could say to him at present was that they should hope that on its way to the savannahs it would pass through lands from which timber might be taken. They were fortunate in having here the best timber in the world and they could add to that that the savannahs already supported a large herd of cattle and were capable of supporting a very much larger number, if there was any prospect of selling them when they were brought into existence, and they could add that, in addition to the savannahs on this side, there were savannahs on the Brazilian side and doubtless cattle from those savannahs would be offered for sale, if there were means of getting them down to our coast lands. He saw no reason either why, if these savannahs were opened, they should not breed horses there, not for racing, but he did not mean that that would not be a profitable development, although he had no doubt—he saw a prominent member of the racing club sitting quite close to him—if the savannahs were opened, other owners than Mr. Flood would breed horses for racing purpose, but he would rather see horses bred there for ordinary commercial use and he should like to see sugar planters breed their mules there instead of importing them from the Argentine and New York. He was going up to the interior with the hope not to see the nakedness of the land, but its fertility. What struck him in all the talk that had been about development was that no one had faced the problem of submitting a proper scheme. People talked vaguely about a railway to the interior, but they wanted to settle, and it was not an easy matter

to settle, where that railway was to go and where it was to start from. There were other places which if they had to begin anew they might without much hesitation say were better places for the starting off point of a railway, but they were not to forget what they had locked up in Georgetown and what loss would be caused to the inhabitants here if they started a new capital in some other part of the coast. They must not start a railway without being quite sure where they wanted it to go and beyond that what they could get on the way in which they wanted it to go.

THE ROCKSTONE-POTARO SURVEY.

Last year they had a survey carried out; it was arranged before he came here, from Rockstone to the Potaro valley. Personally, he was bitterly disappointed with the results of that survey. The estimated cost of a railway built through comparatively easy land was, he did not hesitate to say, absolutely prohibitive. But that was not the worst part of the case. Estimates were fallible and they might get another engineer to go over the same route and give them a very different estimate, but as far as he could ascertain, that railway was simply running into a *cul de sac* and could not be prolonged much further than where the survey terminated. They had got to decide where they wanted to start from and where they wanted to go and to be quite sure that the route they had selected was a feasible one and that was his object in going up to see for himself. He was not an engineer, he was not competent to decide on the feasibility and cost of any such scheme, but the advantage of going to see the place oneself was that one could understand what experts told about the difficulties and the possibilities and, unless he had some personal knowledge of the country, this was a most difficult thing. They had been very fortunate he thought in securing the services of a skilled engineer in tropical railway construction and he had every hope that his visit here might lead to the elaboration of a more definite and concrete scheme for communication with the interior. Whether the scheme that had been stated in detail would ever be carried out depended firstly on whether they could be united here in pressing for its execution and in being willing to make sacrifices in order that it might be carried out, secondly, whether they could induce and convince capitalists that it was a good scheme, and thirdly, whether they could enlist the material support of the Secretary of State for the Colonies in carrying out the scheme. They were fortunate, he thought, in the present Colonial Secretary. A remote ancestor of his was one of the first visitors to Guiana and one of the first to try to carry out a scheme for its development. He hoped for Mr. Harcourt who now held the proud position of Secretary of State for the Colonies that it would be during his term of office that such a scheme might be decided upon and commenced and carried out. (Applause.)

THE HYMENOPTERA OF THE GEORGETOWN MUSEUM.

PART V.

By P. CAMERON.

CHALCIDIDÆ.

CHALCIDINÆ.

Chalcis annulata, F.

Chalcis annulata, Ashmead, Class of Chalcid Flies, Mem. Cair. Mus., i, 408; Howard, Journ. Linn. Soc. xxv., 80.

Chalcis ovata, Say; Cresson, Trans. Am. Ent. Soc., iv., 59, Cameron, Biol. Cent. Am., i, 99, Pl. iv., f., 16; Marshall, Ann. Soc. Ent. Fr., 1892, 70; Crawford, Ball., Ent. Tech. Ser. U.S. Dep. Agric., Ser. i, 19, Pt. ii p. 15, f., 8-10; Marshall, Ann. Soc. Ent. Fr., 1892, 70.

Chalcis annulipes, Walker, Ent. Mag. ii, 29.

Bred from the Pyralids, *Mesocondyla concordalis*, and *Lineodes*, sp.

The extent and shape of the black markings on the legs and the size vary in this Common North and South American species. *C. incerta* is regarded by Ashmead, *l.c.*, as identical with *ovata*, but Crawford, *l.c.*, p. 16, considers it to be a good species, easily separated by differences in the femoral teeth.

Spilochalcis nunani, sp. n.

Pallid yellow, the mesonotum darker coloured, densely covered with blackish pubescence; the apex of the 2nd and the following abdominal segments fuscous, antennal scape yellow, narrowly black above, the upper half of the flagellum black, the lower pallid fulvous; the lower side of the scape with a semicircular projection, hollowed on the innerside; hind femora with 13 small rounded teeth; the basal about twice the size of the others and more sharply pointed, the 2nd smaller, more isolated—Apex of scutellum with a broad shallow incision. Abdominal petiole about 4 times longer than wide. Pubescence on top of thorax dense, black. Metanotum with 3 rows of areæ, the basal distinct, the inner pair twice wider than long, narrowed on the inner-side, the 2nd row has the inner pair wider than long, the outer longer than wide, the inner of the two narrower than the outer; there is one large area on the centre of the apex. Wings hyaline, the apex fuscous. Male. Length, 4 m.m.

The head is of a much paler, clear yellow than the thorax—Basal slope of pronotum smooth, the rest of it, the mesonotum and scutellum closely reticulated—punctured, as are also the metapleuræ—Pro—and mesopleuræ mostly smooth, the apex of the latter with an irregularly striated band.

May be known from the other Guiana species by the dilated appendage on the apex of the antennal scape. It may or may not be a sexual character.

The species is dedicated to Mr. J. J. Nunan, B.A., LL.B., the President of the Royal Agricultural and Commercial Society of British Guiana.

Spilochalcis testaceicollis, sp. n.

Black, covered with a white pile; the face, clypeus, mandibles except the teeth, palpi, the outer orbits narrowly, the four anterior tibiæ and a large curved line on the upper apical half of hind femora; tarsi, whitish yellow, the sides of the pronotum broadly and the four anterior femora testaceous the four anterior coxæ and trochanters and the hind legs except the tarsi (which are testaceous) black; the hind femora with 16 teeth, which are somewhat irregular. Abdomen piceous, the back of the 2nd and 3rd blackish; the petiole four times longer than thick. Apex of scutellum broadly rounded, margined. Wings hyaline, the nervures black. Male. Length, 3 m.m.

Potaro, May.

The vertex laterally is irregularly punctured. Antennal scape testaceous, the flagellum densely covered with a white pile. Central lobe of mesonotum strongly, irregularly transversely striated, the lateral more weakly, irregularly striated, more weakly on the outer side. Scutellum closely reticulated. Metanotum widely areolated; the areola wider than long, obliquely narrowed to a point at the apex; it is bordered by 3 areæ, of which the apical is larger and wider than the others.

Spilochalcis coronata, sp. n.

Yellow, with the following parts black: a line on the top of the antennal scape, the flagellum, the upper half of the clypeus, the hollowed centre of the front, the occiput, the hinder edge of the vertex narrowly to near the eyes, a straight line running down from the middle ocellus and a curved one from the lateral, the basal slope of the pronotum except round the edges, the mesonotum except for two oblique lines in the centre, narrowed towards the apex, on the outer edge of the middle lobe, a broader line on the sides along the tegulæ, the inner side with a longish shallow incision; a pyriform mark on the centre of the scutellum on the basal three-fourths, narrow at the base, becoming gradually widened to the apex, which is broadly rounded, the meso and metapleuræ, an irregular spot on the former before the tegulæ, a larger triangular spot below the latter and touching them and a longish spot under the hind wings, with a small triangular spot at the apex above, the metathorax except for a triangular spot under the hind wings with a small spot in front, the base of the 2nd segment irregularly and the whole of the others, black. Four front legs yellow; the hinder yellow with the following parts black: the outer apical half of the hind coxæ, the base of the mark incised, the apex on the inner side narrowly, a large oblique mark, commencing at the basal tooth and extending to the 13th, reaching near to the bottom of the upper fourth, the base more irregular and more oblique than the apex, the top rounded, a smaller, semicircular spot on the lower part of the apex, the tibiæ

behind and the basal half all round ; black. Femora with 23 teeth, close together, of almost equal size throughout. Apex of scutellum bluntly rounded, the centre slightly narrowed. Female. Length, 5 m.m.

Potaro, May.

Head, pro and mesonotum coarsely punctured, the puncture on the scutellum running into reticulations,—covered densely with a white pile. The base of the mesopleuræ smooth, irregularly longitudinally, not very closely striated ; the portion immediately below the tegulæ is smooth, divided into 2 parts by a furrow, oblique, the upper part sloping towards the base, of equal width, about one half longer than wide, the apical part larger, sloping obliquely to the apex, conical, the narrowed part above. Metapleuræ rounded, covered with large, deep, clearly separated round punctures, placed in oblique rows ; in the centre, on the lower three-fourths is a row of larger punctures, with a smooth border on either side. The metanotum short, the reticulations large, the basal row small, the central large, the middle pair oblique, wider than long, narrowed inwardly ; the narrowed part at the apical junction is closed by a keel, forming a small triangular area. Abdominal petiole as wide as long. Near the apex of the hind coxæ above is a distinct, sharp spine. Abdomen shorter than the thorax ; the sheath of the ovipositor is broad.

Spilochalcis guianensis, sp. n.

Reddish testaceous, the flagellum of antennæ, apex of femoral teeth and the sheath of ovipositor, black ; there are 13 femoral teeth, the basal long, curved testaceous, black at the apex, the others short, thick ; wings hyaline, the nervures testaceous. Apex of scutellum projecting more broadly than the sides, almost transverse. The middle area of metanotum are large, there are 6 ; the middle pair wider than long, the outer 2 more distinctly longer than wide. The upper parts of the head, except the central hollow, pro-mesonotum and scutellum closely reticulated punctured, the parapsidal furrows crenulated. Abdominal petiole twice longer than wide, stoutly keeled in the middle above, the abdomen is as long as the head and thorax united ; the ovipositor distinctly projects. Propleuræ reticulated above ; there is a distinct, obliquely curved furrow down the middle ; the lower part is smooth, depressed and bordered above by a curved furrow. Base and apex of mesopleuræ smooth, the raised centre irregularly striated. Thoracic pile black. Female. Length, 7 m.m.

The basal half of the flagellum is brownish below. Abdomen as long as the head and thorax united, the antennal scape is pale lemon-yellow.

Spilochalcis quelchi, sp. n.

Ferruginous, the antennal scape, oral region, face, malar space and the lower part of the outer orbits, pallid yellow, the flagellum except the basal half, which is brown and the pedicel which is testaceous except broadly above, the femoral teeth, and the sheath of the ovipositor, black ; there are 16 femoral teeth, the basal long, curved, testaceous, black at the apex ; the others are small, the middle testaceous at the base. Abdominal petiole nearly

4 times longer than wide. Wings hyaline, the nervures testaceous. Apex of scutellum projecting, with a shallow incision, its sides broadly rounded. Metanotal areæ large, irregular; the basal row distinct, the central large; the middle slightly wider than long, the others longer than wide. Female. Length, 7 m.m.

Sides of front closely reticulated punctured, the hollow finely, closely striated. The basal slope of pronotum aciculated, the rest, the mesonotum and the scutellum closely, reticulated—punctured. There are 3 stout curved keels on the lower part of the propleuræ, the 3 uniting at the base; there are stout curved striæ in the centre of the upper part; the apex above is finely closely punctured; the upper basal two-thirds of the mesopleuræ irregularly, not very closely striated, the lower part aciculated; the rest closely, strongly reticulated. The pubescence on the head and thorax is dense and white.

Closely allied to *S. guianensis*, which may be known from it by the black pubescence, by the longer abdomen, with shorter petiole, and by the apex of scutellum not being bilobate.

Spilochalcis melanura, sp. n.

Yellow, the top of the antennal scape narrowly, the upper parts and apex of flagellum, a semicircular mark covering the lower half of the occiput, united to the top by a narrow median line, there being a transverse line at the middle ocellus, a small triangular spot on the centre of the basal slope of the pronotum, a broad curved line on the base of the mesonotum, on the middle two-thirds from its centre a line runs to the scutellum, at the base it is of the same width, as the transverse line; it becomes gradually wider towards the apex; there is a broad transverse line, narrowed in the middle, at the base of the scutellum; a longish conical mark in the centre of the apical three-fourths of the scutellum, the narrowed end at the base, a semicircular mark on post-scutellum, a broad transverse mark in the centre of the 1st to 4th dorsal abdominal segments, the centre of the 5th broadly above the whole of the 6th and the sheath of ovipositor, a large, irregular ovate mark in the centre of the hind coxæ, nearer the base than the apex, a smaller, squarish spot in the centre of the apex of the femora on both sides, the underside of the hind trochanters, and the femoral teeth, black; there are 12 teeth, the basal long, curved, thickened and yellow at the base; the 2nd smaller than the others. Female. Length, 6 m.m. Male, 4 m.m.

Pubescence short, white, pro-mesonotum and scutellum umbilically punctate; the apex of scutellum with the projecting margin narrowed slightly in the middle. Metanotum irregularly areolated; the areola more than twice longer than wide, obliquely narrowed to a sharp point at the base, becoming narrowed towards the apex which is transverse. Abdominal petiole short, as wide as long.

Spilochalcis peronata, sp. n.

Rufo-testaceous, the head paler in tint, as are also, to a less extent, the 4 front legs, the upper side of the flagellum, the apical joints more broadly,

num¹ the 4 front coxæ and trochanters except above, the hind coxæ, trochanters, basal third of hind femora, their teeth, apical fourth of tibiæ and the tarsi, black; there are 13 teeth, the basal large, longer than it is wide at the base, the others short, blunt, rounded. Wings hyaline, tinged with yellow in front from the base to the stigmal branch; the nervures testaceous. Basal half of scutellum with a smooth keel down the middle of the basal half, the apex bluntly rounded with a raised margin. The abdomen is missing in the only example in the collection. Female. Length to end of thorax, 4 m.m.

Densely covered with pale fulvous pubescence. Vertex and sides of front umbilically punctate. Sides of face finely, closely obliquely striated, the top and the sides of the raised central part smooth, the rest with large scattered punctures. Pro-mesonotum and scutellum closely, strongly rugosely punctured, the punctures on the mesonotum running into reticulations. Metanotum irregularly reticulated, a stout keel down the middle with a large area on either side, slightly narrowed towards the base from the outer side. Lower apical half of the base of mesopleuræ strongly longitudinally striated, the basal smooth, the 2 parts separated by a keel; the apex smooth with a curved striated band down the hollowed centre. Metapleuræ strongly, closely punctured.

Spilochalcis melanostoma, sp. n.

Luteous, the flagellum of antenna, the mandibles at the apex, the greater part of the apex of clypeus, the mark narrowed in the centre, the front except for a longish triangular line on its sides, vertex, occiput, a large triangular spot on the apical three-fourths of the mesonotum, the narrowed end at the base, a line down the centre of the scutellum, a broad irregular line on the sides of the abdominal petiole, the apex of 2nd and the greater part of the following segments, a line on the outer sides of the hind coxæ on the lower apical three-fourths, the basal third narrowed below, the apices of the femoral teeth and the hind tibiæ, except irregularly at the base, black; wings hyaline, streaked with fuscous along the middle nervures and more broadly along the apex; the nervures black. Female. Length, 8 m.m.

Hind femora with 13 short stumpy teeth the basal one large, broad at the base, short, the apex ending in a short, blunt tooth, similar to the others. Vertex irregularly striated laterally behind, laterally in front irregularly punctured; the sides of the front closely finely obliquely striated, except at the top close to the eyes. Face stoutly transversely striated. Pro- and mesonotum closely, strongly transversely striated; the scutellum strongly umbilically punctate; its apex almost transverse in the middle, the sides ending in a broad tooth, as long as it is broad at the apex, which is roundly narrowed. Metanotum widely irregularly reticulated, the centre with 2 pairs of areas, the basal oblique, twice wider than long, the apical smaller, almost square. Abdominal petiole as long as the 2nd and 3rd segments united and two-thirds of the length of the hind coxæ-Pro- and mesopleuræ smooth, the metapleuræ coarsely reticulated except for a longish triangular space at the base, its narrow end above.

Spilochalcis lineatiscutis, sp. n.

Luteous, the upper side of antennal scape, the whole of flagellum, the head except a moderately broad line on the centre of the inner orbits, a broader one on the lower three-fourths of the outer orbits, the line narrowly projecting upwards on the inner side above, the malar space, mesonotum, the scutellum broadly in the middle from the base to near the apex, the apex of the black spot rounded, the 3rd and 4th abdominal segments above, the others entirely, the hind trochanters on the outer side, an irregular mark, almost twice longer than broad on the lower part of the hind femora close to the basal teeth, the teeth, the hind tibiæ and their spurs, black; wings hyaline, the nervures and stigma black; a broad fuscous cloud extends from the base of the anterior to the stigma, it becoming gradually wider towards the apex, where it extends slightly beyond the middle, the posterior basal part is slightly smoky not clear hyaline like the apex; the hind wings smoky to shortly beyond the middle. Abdominal petiole of the length of the rest of the abdomen and fully half the length of the thorax. Hind femora with 16 teeth, the basal twice the length of the next, the apical 3 smaller and closer together. Pro and mesonotum and the scutellum closely strongly, transversely striated; closely covered with short whitish pubescence. Metanotum coarsely irregularly reticulated; the areola twice wider than long, slightly narrowed towards the apex; the basal and apical keels slightly rounded. Male. Length, 7 m.m.

Face roundly raised in the centre, strongly irregularly transversely striated. A broad closely striated band runs obliquely from between the ocelli to the eyes.

Potaro, May.

Spilochalcis tricolorata, sp. n.

Testaceous, the pleuræ and legs paler, more yellowish, the dilated part of the abdomen piceous red, the back black in the middle; the apex of hind femora with an irregular clear yellow spot on the outside the flagellum of antennæ black, brownish, at the base below; the femoral teeth, black, small, about 18 in number; the femora are black on eitherside of the base of the tibiæ; wings hyaline, the nervures black. Female. Length, 3 m.m.

Densely covered with white pubescence, smooth, the upper part of the propleuræ finely, closely obliquely striated; the upper part of the mesopleuræ between the keels (which are flat and smooth) irregularly obliquely, not very strongly striated towards the base. Abdominal petiole as long as the slope of the metanotum and one third of the length of the rest of the abdomen and less than one third of the length of the hind femora. Puncturation of the top of head and thorax sparse and weak.

Spilochalcis megalospilus, sp. n.

Testaceous, the orbits, the sides of the head, pronotum, of the mesonotum, and the scutellum pale yellow, the flagellum darker coloured, blackish towards the apex; femoral teeth short, blunt, closely pressed, about 16 in

number; wings hyaline, the nervures fuscous. Apex of scutellum broadly rounded. Metanotum broadly rounded, closely reticulated; the base with 2 small square areæ in the centre. Mesonotum closely, somewhat strongly transversely punctured; the scutellum closely reticulated, the reticulations more regular and half the size of those on the metanotum. The antennal scape reaches to the lower ocellus. Propleuræ somewhat strongly, irregularly striated. Mesopleuræ aciculated, the oblique furrow closely striated. Meta-pleuræ irregularly punctured, the lower half more strongly than the upper. Male. Length, 3 m.m.

Trismicra oiketicusi, sp. n.

Black, with the following parts orange yellow: the antennal scape except above, the face, clypeus above the eye orbits narrowly, the apex of pronotum, except for a black transverse mark, narrowed on the inner side, the top and base of propleuræ, 2 oblique lines in the centre of the mesonotum, commencing near the base and extending to the apex; a curved line on the sides, commencing near the base and at the apex reaching near to the central lines, it being narrowed on the inner side; tegulæ, a small spot on the side of the scutellum at the base, its sides broadly, the black central mark narrow at the base, becoming gradually roundly widened, then narrowed to a point at the apex, where it is twice the width of the base; this central mark is followed and joined to a transverse line which reaches near to the outer edge and 2 anterior and one central mark on the base of the mesopleuræ below the tegulæ. Legs black; the apex of the 4 anterior femora behind, broadly in front, the 4 anterior tibiæ in front, the tarsi, the hind coxæ, an irregular, broad line on the top of the basal half of the hind femora, a small spot on its apex above, one on either side of the apex, both pyriform, the inner the larger and with its apex more distinctly narrowed. Wings hyaline, the nervures fuscous. Female. Length, 7 m.m.

The 3 teeth are on the apical half of the femora; they are large, oblique the apical shorter, thicker and dilated at the apex. Apex of scutellum bluntly rounded, margined, crenulated inside the margin. Abdominal petiole fully twice longer than wide. Pro and mesonotum with scutellum rugosely punctured; the metanotum areolated; there are 2 small basal triangular areæ in the centre, followed by 2 large, wider than long irregular oblique ones, followed by a small semicircular one; the others are smaller, more irregular. There are obscure yellow transverse lines on the sides of the 2nd, 3rd and penultimate abdominal segments. The upper half of the propleuræ is finely striated, the lower smooth, the upper two-thirds of the mesopleuræ more strongly striated, the base strongly punctured, the rest smooth.

Tetrasmicra longispina, sp. n.

Yellow, the antennæ above, the scape more narrowly than the flagellum, a line running down down from the ocelli to the antennæ, occiput except round the edges, a line, narrowed above, in the centre of the pronotum, the base of the mesonotum to near a broad line, slightly narrowed towards the base, running from the basal line to the scutellum, more than the inner half

of the lateral lobes, a semicircular mark on the lobe at the sides of the base of scutellum, a minute spot at the base of the scutellum laterally, a line down the middle of the scutellum, the basal half of equal width, it then becomes slightly dilated, then dilated into a semicircle which fills the apex of the scutellum, the 2nd and following dorsal abdominal segments bear broad transverse bands, the apex of the hind coxæ, broadly above, narrowly below, a line on either side of the femora above, the inner shorter and broader than the outer, incised at the apex, dilated on the lowerside at the base, a spot between the basal tooth, extending to the middle between it and the 2nd, narrowed on the outerside below, rounded above and reaching near to the apex, a semicircular mark on the apex, united to the mark on the innerside, and the teeth, except the base of the middle 2, narrowly, and the basal half of the apical, the basal fourth and apical of the hind tibiæ and the apical joint of the hind tarsi, black. Lower side of flagellum fuscous. Wings hyaline, the nervures black. Male. Length, 6 m.m.

Potaro, May. D.F.

Densely covered with white pubescence—Pro-mesonotum and scutellum umbilically punctate scutellum bluntly bilobate, the space between the lobes smooth, depressed. Metanotum with 4 areæ of almost equal size and longer than wide on the 2nd row; there are 4 wider ones round the apex. Propleuræ smooth. Mesopleuræ raised to a keel in the middle, the sides on either side obliquely sloped; smooth above, reticulated below. The raised centre of the metapleuræ reticulated, the base and apex smooth. The femoral teeth are long, oblique, the basal 3 sharp-pointed and become gradually shorter as does also the space between them; the apical is shorter, thicker and more rounded.

Tetrasmicra crocata, Walker.

Smicra crocata, Walker, Trans. Ent. Soc. 1864, 186.

Tetrasmicra crocata, Ashmead, Mem. Cairn. Mus. i, 456; Pl. XXXII, f. 2.

A female agrees fairly well with Walker's description and with Ashmead's figure, *l.c.*

Hexasmicra microspila, sp. n.

Yellow, the upperside of the antennal scape, a small spot, twice longer than wide, on the lateral lobe of mesonotum, a line on the centre of the basal three-fourths of the scutellum, faint at the base, gradually widened, but not much towards the apex, and the femoral teeth, black; the antennal flagellum reddish brown, black above; the back of the abdomen infuscated; Rings hyaline, the nervures, fuscous. Apex of scutellum margined, broadly bilobate. Metanotum with 3 rows of areæ, the basal irregular, narrowed towards the centre of the metanotum; there are 6 areæ in the centre, the middle 4 square, the outer smaller and roundly narrowed on the inner side; there are 6 apical areæ, the outer larger, wider and more regular than the central; the apex has an area almost twice longer than wide, rounded above, in the centre.

TIMEHRI :

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FOREWORD.

THE present issue of "Timehri" appears under circumstances less auspicious than was at all anticipated when the articles were written. It was originally intended to publish nearly a year ago, but delays due to procuring the illustrations and to other causes brought us down to the opening of the Great European War when public attention was so entirely absorbed by passing events that the Editors considered it prudent to postpone the issue for a time in the hope of a renewed interest in the questions of colonial development discussed in some of the articles. Unhappily the war continues and schemes of development possess for the moment little more than an academic interest. But the value of the articles is not thereby discounted as contributions to the future consideration of these schemes, which, we hope, will, when the clouds of war have given place to brighter skies, rise rejuvenated, and, in a world released from the constant threat of bloated armaments, come to a vigorous maturity hitherto unrealised. Some basis of hope for such a revitalisation of the Colony as might issue in expansion of its development is afforded by the direct effect of the present upheaval in Europe on the great beet sugar industry built up with such huge effort in times of peace by Germany amongst other Continental Powers. To some extent artificial as the competition of beet with cane has been, the whole structure has at least in the German Empire been undermined by the disastrous sacrifice of men and material which Germany, whatever the final terms of peace may be, has paid and will pay for her excursion in world conquest. The comparative immunity from economic disturbance which this and other cane-growing Colonies have enjoyed owing to the British command of the seas is an advantage for which not only should we be supremely thankful, but which we should prepare to exploit to the very utmost. The large sugar estates may be relied upon to extend their cultivations and some have already done so, but this is not the only channel by which increased prosperity may be enticed.

Cane-farming may be encouraged and promises for several years to come to promote the prosperity of the small grower if a sound basis of mutual confidence can be laid as between farmer and factory. Suspicion and distrust has been a large factor in defeating efforts in this direction. This distrust might be dissipated by a system of check weighing and gauging paid for by the parties interested but guaranteed by official supervision. Probably the Local Government Board is in the best position of any Government Department to be an intermediary between the small grower and the cane factory, and if a scale of fees were arranged in conference with growers and manufacturers the district and village overseers would be available for the checking work required.

A RAILWAY AND HINTERLAND DEVELOPMENT.*

By SIR WALTER EGERTON, K.C.M.G.

I have promised to address you to-night on the subject of the development of the Interior of this Colony of British Guiana, great in area and great in magnificent possibilities. Though this is a subject inseparably bound up with the prosperity of the country and is one, I am sure, of deep interest to all residents, I fear that it has been so fully discussed, both in public and private, for many years past and especially during the recent few months, that it is difficult to say anything new or to avoid boring many of those present.

“For the last thirty years spasmodic attempts have been made to interest outsiders in the construction of a railway from Georgetown to Brazil.” So writes a Mr Headley, a native of British Guiana, in a letter published in “The Daily Argosy” of Saturday, the 21st March, and probably the idea of such a railway is much older. More recently the late Colonel Link worked energetically to bring to fruition a scheme for such a line. With considerable ability and unlimited enthusiasm it is possible that but for his sudden death he might have succeeded. Many of our prominent residents have written and spoken in favour of railway construction to the South. Mr. Nunan, our present Attorney General, both in the colony and out of it has advocated interior development by a railway and pointed out the possibility of the extension of such a railway as a main trunk-line through South America.

I do not claim to be the originator of any such schemes but I hope I may have done and may yet do something towards their realisation. Many of us believe a North to South transcontinental line is quite possible of accomplishment and its construction does not present nearly the same difficulties as the famous African “Cape to Cairo” scheme, except that we yet lack a Rhodes to push it on to execution. It is said that the opportunity finds the man. I believe the man will be forthcoming if we construct our line to the Brazilian frontier as a “pointer” to the Southern Cross and the great cities of Rio de Janeiro and Buenos Ayres lying under it, which are the proper termini of any such line.

SOUTH AMERICAN DEVELOPMENT.

Do you realise how rapidly the great Republics of the Atlantic watershed of South America are developing? The Argentine has already over seven million inhabitants and 20,000 miles of railways; the capital, Buenos Ayres, already takes its place amongst the largest cities in the world with a population of 1,300,000—more than four times the total population of the whole of this colony. Uruguay, a comparatively small

* Address delivered at a meeting of the Royal Agricultural and Commercial Society, March 31st, 1914.

State wedged in between the Argentine and vast Brazil, has a population of one million, 1,700 miles of railway and a capital, Monte Video, with 325,000 people. Paraguay, a purely inland State, also wedged between Argentina and Brazil, has a population of 800,000. Bolivia, due north of the Argentine and west of Brazil, another purely inland State, has a population of $2\frac{1}{4}$ millions; and Brazil itself, stretching over half the total Continent, a population of $21\frac{1}{2}$ millions, 16,000 miles of railways, with its capital, Rio de Janeiro, containing one million inhabitants—and many other large rapidly growing towns dotted along its seaboard the populations of which would travel by a trans-continental railway. Now the population of Argentina, Uruguay, Paraguay, Bolivia and Brazil combined is over 33,000,000, and is increasing at the rate of not less than three-quarters of a million yearly.

Of the Brazilian railways the Federal Government owns 7,000 miles and is pursuing a policy of developing intercommunication between its various States.

The direct route from Georgetown via Manãos to Buenos Ayres, the capital of the Argentine Republic, is practically due North and South. You must realise what an enormous traffic such a railway line is certain to develop if it is ever constructed. The total distance over 40 degrees of latitude, from $6\frac{1}{2}$ degrees North to 34 degrees South, and allowing, say 20 per cent. for deviations from the straight line, would be approximately 3,000 miles. At 30 miles an hour a little over four days, one-third of the time it now takes to reach Jamaica from Georgetown; at only 20 miles an hour, $6\frac{1}{4}$ days. The saving in actual distance from any of the large cities of the South East Coast of our Continent to any part of North or Central America, or to any place West of Georgetown on the Northern coast of South America, would be nearly 1,000 miles, but the saving in *time* would be much greater than proportional to the shortening of the distance traversed. A substitution of 3,000 miles of travel by land in place of, say, 3,900 miles in a steamship on a turbulent ocean would attract people travelling for pleasure as well as those travelling on business, to whom time is money.

THE CONNECTING LINK.

Taking the whole main line, I regret I have not the latest maps, but railways already exist stretching from Buenos Ayres to Rio de Janeiro, over a thousand miles, and as far as I can ascertain, from Rio, North-westward, in the direction of Manãos, for rather less than 1,000 miles. From where the iron road now terminates to Manãos is approximately only some 900 miles, and we know that Manãos to Georgetown is about 800 of which our section in British Guiana would be 340. The difference in time and distance would, of course, be increasingly in favour of a railway from or to places in the interior of Brazil or the other countries. Unfortunately, at the present time the recent rapid and very great depreciation in the value of the main product of the Amazon, Para rubber—and you must remember that to the States of Brazil in the



HIS EXCELLENCY AND PARTY. *[Photo by His Excellency.]*
Taken at Rupununi.



KURUPUKARI RAPIDS. *[Photo by His Excellency.]*
Site of the Proposed Bridge over Essequibo River.

Amazon valley Para rubber is even more important than sugar is to us—these States are temporarily unable to finance large developmental undertakings, although the Government of Amazonas would surely welcome means of communication from Manãos to the North Atlantic at Georgetown. The Federal Government of Brazil has probably already in contemplation as the ultimate objective of the line, which has already reached far into Matto Grosso, giving communication by rail from the capital to the Amazon valley and Manãos, a line which would help to bind more firmly together the great confederation of States which form the Brazilian Empire. Surely if the first section, Georgetown to the savannah country on the Brazilian frontier, is constructed, the continuation to Manãos, either by the Brazilian Government or private enterprise, is not likely to be long delayed and if the line once reaches Manãos the missing link, necessary to connect the Northern 800 with the Southern 38,000 miles of railway *already* in existence, together bridging more than two-thirds of the total distance, cannot long be delayed.

We have already in Georgetown an excellent harbour; the approach from the sea is safe but shallow. It is, however, even now the best on the mainland between Trinidad and the Amazon, and is one which is capable of being deepened so as to make Georgetown a first-class port with depths sufficient for the largest ships in the South America trade, free from earthquakes and where hurricanes are unknown.

GEORGETOWN THE STARTING POINT.

Nature has also pointed out that the easiest way of communication to the South is from Georgetown via the Rupununi valley. The watershed between the Atlantic and the Amazon there only rises to a height of 300 ft., while East and West mountain ranges bar the way to the North. So much for the arguments in favour of a Continental main line the construction of which must be left to others and may be a work of somewhat distant date.

Let us now consider the projected Colonial line and the arguments in favour of its construction. I firmly hold the opinion that such a line should commence from Georgetown, the commercial centre of the Colony. There are several ways out of Georgetown and the route adopted would probably be that on which proprietors of land in private ownership did not open their mouths too wide in the matter of price demanded, and were content to take a fair valuation and share in the enormous increase in values consequent on the Colony's expansion. I have heard it stated that the cost of acquisition of land would be considerable. I do not think so, because the present market price that anyone anxious to sell is able to obtain is very small; we have recently seen this in the sale of the Colonial Company's estates—and the land to be passed through by a railway is nearly all out of cultivation. There are two distinct routes to the Interior on the East Bank of the Demerara River, and there are also two routes on the West. I should prefer a route to the East, bringing the railway right into the

present city of Georgetown, rather than making the terminus on the West Bank, but probably the cheapest route to construct and the easiest to finance would be the conversion of the existing West Coast Railway to metre gauge and its extension up the eastern side of the watershed between the Demerara and Essequibo Rivers with a station opposite Bartica to serve the Mazaruni and Cuyuni traffic. As you know, the West Coast Railway is being continued to Parika in order to correct the error made in 1897 of not giving that Railway a terminus on the Essequibo estuary. The extension is nearly completed and if the financial result is favourable no doubt the Combined Court will be asked, and will readily approve, a further extension up the right bank of the Essequibo River to a spot opposite Bartica. The present short extension of $3\frac{1}{2}$ miles is being excellently and economically carried out under the supervision of Mr. Roy, the General Manager, with a heavy 70lb. rail, for the very moderate sum of £3,500 a mile. If only the other lines from Georgetown to Mahaica, which cost some £15,000 a mile, and the earlier extensions to Rosignol on the Berbice river, and on the West Coast, from Vreed-en-Hoop to Greenwich Park, costing £6,800 per mile, had been equally cheaply built, the system would be earning a fair interest on the capital expended and the colony would not be called upon to pay the burdensome subsidy of \$60,000 a year.

Mr. Roy is of opinion, and he is a competent judge, that the line could be continued at the same rate of £3,500 a mile up to Bartica. If the West Coast line reaches this point *before* a Railway to the South is commenced, I should say that it is pretty certain that Vreed-en-Hoop would be adopted as the commencing point for the Interior line leaving the Wismar-Georgetown section for construction as soon as the Transcontinental Line is within sight. When that time comes direct connexion with the city of Georgetown would be essential.

The extension Parika-Bartica, at £3,500 a mile, would cost about £90,000. Taking the existing steamer traffic to Bartica I believe such a line would pay well from its completion and tend to develop more traffic.

ROUTE OF TRANSCONTINENTAL LINE.

The North and South Railway as shown on the map, after traversing British Guiana and Northern and Central Brazil, crosses the extreme eastern portion of Bolivia and a corner of Paraguay before entering the Argentine, but it is more probable that the first Transcontinental Line would follow a more easterly route down the eastern valley of the great Paraguay river through more thickly populated country, and that at first, any rate, a North and South line would be diverted eastwards, giving direct communication with Rio de Janeiro, the capital of Brazil, and along already existing railways through South-eastern Brazil and Uruguay to the Argentine capital, Buenos Ayres. A direct North and South line would come many years later when the Argentine railways have been pushed up past the northern boundary of that State into the Eastern portion of Bolivia, as is certain to take place in the natural expansion of the Argentine Railway system.



[Photo by His Excellency.]
HIS EXCELLENCY'S QUARTERS, DADANAWA.
Mr. Melville's "Guest House."



[Photo by His Excellency.]
BALATA DEPÔT, RUPUNUNI RIVER.

THE HINTERLAND RAILWAY.

Now the case for a railway from our coast-line to the southern savannahs may be put thus—there is obviously only time this evening to touch on the matter quite shortly :—

The cultivated and populated portion of British Guiana is but a narrow strip along the coast : almost all of it is swamp, much of it below the level of the sea ; and to render it habitable costly sea defence works are required and in addition empoldering, drainage and irrigation systems, costly to construct and expensive to maintain. Thus all cultivation requires considerable capital expenditure. It is only by combination in village communities that our farmers can cultivate, and most of these communities had the immense advantage of taking over their properties from ruined sugar planters at a small cost, ready equipped with all these requisites. Now this coast strip would never have been cultivated at all but for its amazing fertility. It has long been known as the best land in the world for sugar, and within recent years it has been proved to be equally suitable for rice. It will be a bad day for the colony when the cultivation of the coast land is given up. I do not think we need fear this, but rather that we may expect extension in cultivation if only long-talked-of drainage and irrigation schemes are carried out. But it is not every one who is attracted by the prospect of a life on our flat coast land. In most countries there are plains, hills and valleys that can be cultivated without any such exceptional expenditure, and to attract immigration from other countries we must be able to offer new-comers fertile land for settlement similar to their own. At present the population is hemmed in on the coast ; behind the cultivations are swamps, turned for long distances into shallow reservoirs ; then a wide belt of undulating sandhills, generally forest-covered made familiar to us by the Wismar-Rockstone railway ; near where the sand begins the rapids on the rivers are also met with, and all further progress into the interior becomes slow, wearisome and costly ; otherwise, along the rivers and small streams many fertile areas are met with. This wide sandy belt is exactly like the sand dunes of some ancient seashore, but Professor Harrison with his microscope will assure you it is not a seashore, but is merely due to the disintegration of rocks *in situ*.

In amongst the sandhills, but generally to the south of them, is highly fertile and mineralised country with gold and diamonds in unusual quantity. During the financial year ending to-night the production of gold totalled 82,706 ozs. and 93,752 diamonds totalling 11,119 carats. Since 1890 gold to over 2,300,000 ozs. has been produced, almost entirely from the primitive surface workings of our "pork-knockers"! Our mining industry has given a new and not very pretty word to the language.

These workings are still reached and all supplies for the miners have to be sent by toilsome journeys up rivers cursed with dangerous rapids, cataracts and falls, the miners and their supplies taking weeks to reach their destinations.

NECESSITY OF CHEAP TRANSPORT.

How long is this to go on? Scientific mining with modern machinery is almost impossible under existing conditions. Many companies have tried and failed, killed by the cost of transport and labour and insufficient working capital. I am glad to say we still have two, thanks to the enterprise of local merchants and much honest, persevering work done under great difficulties by the mine managers. These two are increasingly prosperous; both are dredging companies working respectively in the Potaro and Konawaruk valleys. But even these could hardly exist without the little Wismar-Rockstone Railway, and even now with steamer, then railway, then small launch services, transport to Potaro and Konawaruk is still a very expensive matter. Without a railway from the coast it is practically impossible to build the much-wanted cross-country lines connecting up the rivers in the mineralised belt. To build a line from Potaro mouth to the Mazaruni, without a railway from the coast to that point, would cost more than double on account of the ruinous cost of transport. And so it must be with any other such linking up lines from the Mazaruni to Cuyuni, Barama and Barima rivers. I should mention that a line from the Potaro to the Mazaruni would strike the latter river so as to give access to over 100 miles of navigable river above the rapids.

From the Potaro and Konawaruk alone last year, under existing conditions, 19,263 ounces of gold were won.

There is a most curious distrust in this colony of the existence of fertile land in the interior. That distrust is shared by very few of those who know the interior and who know something of agriculture or who are observant travellers. No one who has examined the Indian clearings on the banks of the Essequibo and other rivers and their clearings in the forests of the savannah country can fail to recognise that there is plenty of fertile land for all likely to apply for it for many generations. On the savannahs there are plenty of fertile areas, and in this latitude almost any land will produce crops if rainfall or irrigation is sufficient.

For over two hundred miles from the coast valuable timber forests would be traversed before reaching the open savannahs over 6,000 miles in area, which have such proved possibilities for cattle-raising, and they adjoin 12,000 square miles of savannah country in Brazil.

Recent news is that beyond the Southern Rupununi savannah, in the far south of this colony, gold has been found—another forcible argument in favour of a railway. Once the savannahs are reached transport is easy. Without a railway how can even gold deposits be exploited except in a small way?

ATTRACTION FOR IMMIGRANTS.

With a railway immigration from Barbados and possibly other islands should be attracted, and much of the labour employed in building the railway would probably settle along the line. Any railway scheme



[Photo by His Excellency.
VIEW FROM COMMISSIONER'S HOUSE, DADANAWA.
Mount Darukaburi in Distance.



[Photo by His Excellency.
PARTY'S FIRST VIEW OF RUPUNUNI SAVANNAH.

should include provision for considerable immigration expenditure to make good the labour supply on the coast depleted owing to local labourers working on the line. But the dislocation of labour due to railway construction should surely not be greater than at the time of the first gold discoveries.

The land will grow all tropical products; it is growing already in the savannah country cotton, excellent tobacco, ground provisions, and fruit trees. There is no reasonable doubt that with a railway to the savannahs, not taking into account branch light lines from Potaro linking up the Mazuruni, Cuyuni, Barama and Barima, much more fertile agricultural land would be made accessible than many generations could exploit. The great Schomburgk made a calculation that to populate British Guiana as thickly populated as the Barbados of his day, and doubtless the population of that little island has increased since, would require 55,000,000 persons. Why all this discussion as to whether the savannahs are fit for cultivation? We know that parts of them are fertile far more than is likely to be required for agricultural purposes if a railway is built. And we know the forest land, except in the sandy belt, is very fertile. If you doubt, go and see the Indian clearings on the river banks and inland from them. Ask any of the thousands of miners whether, when they do find time to cultivate, the returns are not good.

It must be remembered there are two distinct climates in this colony—the coastal with two wet seasons, and the inland, commencing about 150 miles inland, with only one. Many tropical products will grow well in either, some only in one.

More than half the total production of balata in the colony comes from the Rupununi district. In 1913 the production was 759,000 lbs. out of a total of 1,316,000 lbs. Much of the district is not exploited because of transport difficulties. With a railway the cost of production would be so much reduced as even at present prices to make the industry very profitable. I have often expressed the opinion that the savannahs should be devoted to cattle-raising for a considerable time; but there is another industry and that one in which very large fortunes have been and are being made for which the savannahs are, in my opinion, most suitable, and that is ostrich farming. Within the memory of those now living that industry in South Africa has grown from nothing to be worth two millions sterling a year. It is being found equally profitable in Australia. It flourishes in Egypt and the Soudan and the ostrich is native in Nigeria. I kept one myself for some time in good health in Government House grounds in Lagos, the capital of that colony, feeding it partly on old tennis balls, and the grass plains of Northern Nigeria are similar to our savannahs. I wrote to the Governor-General with a view to obtaining some ostriches from that country, as the climate and general conditions there are more nearly similar to those here, and it is interesting to find that Sir Frederick Lugard intends to make ostrich farming a Government monopoly in

Nigeria and that for the last year he has been collecting ostriches for that purpose, and further that the French forbid exports from their West African Colonies. The Dutch also in Curaçao have started ostrich farming. I hope that in this matter we shall not be content to look on while others make fortunes, as in the case of Para rubber, which has recently been proved to grow as well here and to produce as bountifully as in the Eastern plantations. Sir Frederick Lugard has promised later to let me have a few ostriches and, if the Combined Court grants the small amount required for their introduction, we shall be able to have a fair stock on the savannahs in a few years and provide the Aboriginal Indian with another congenial occupation. I say another, for he has already proved himself to be an efficient cowherd and an appreciator of beef and milk as articles of diet. The best authorities obtainable consider that our savannahs could support three-quarters of a million cattle—more than is required to provide an export of 100,000 head a year; sufficient to provide a railway to the savannahs with adequate traffic to more than cover working expenses.

A GOVERNMENT RAILWAY.

If we can get capitalists to build the line on reasonable conditions, by all means accept their offer, but I would remind you a hundred years have passed without such an offer being received and money will not be forthcoming without fair certainty of profit. If there is to be profit let it go into the colony's chest. With a Government-built line you have the rates for freight and passengers under control. You ensure that the line is worked for the benefit of the country and not for that of private shareholders. You facilitate the building of branches. I would ask those against a Government line to consider the experience not of our Dominions, with temperate climates and a white population, but that of our tropical colonies.

Look at the piteous history of the Jamaica railway. Built by a private company, purchased by the colony, sold to a company and extended, the colony then forced to re-purchase as the company failed, and its capital cost is now £14,300 a mile. The railway still fails to pay all interest on capital, though of course the colony could not prosper without the line, but if it had been kept as a Colonial line and constructed by Government at a reasonable cost it would be a most profitable undertaking. Under Government management financial equilibrium is being rapidly established, notwithstanding the enormous over-capitalization burden. Take Trinidad—a Government line, paying well; Ceylon, Federated Malay States, Gold Coast, Sierra Leone, Mauritius, British East Africa, all with Government railway systems and all, even the last, with its much decried Uganda railway, paying well. And these comprise all our tropical Colonies with considerable length of railways.

His Excellency after delivering his address, proceeded to show magic lantern views taken during his journey in the interior, prefacing these on the screen with two maps: one of South America showing



[Photo by His Excellency.]
MILCH COWS AT DADANAWA.



[Photo by His Excellency.]
CAMP ON TAKUTU SAVANNAH, TEN MILES FROM R.C. MISSION.
Kanuku Mountains in Distance.

the existing railways in the South-East of the Continent and the route of a main Continental line connecting these lines with the North Atlantic at Georgetown, the other a map of British Guiana with the proposed interior railway marked thereon and the route followed by the Governor's party. His Excellency's remarks while showing the maps and views were extempore and were not reported.

AN ADDENDUM.

Sir Walter Egerton in revising his address for publication in "Timehri" has been pleased to add the following footnote:—

"There is, in my opinion, no doubt that the people of the Colony are very strongly in favour of the construction of a railway, and the scheme I have laid before the Secretary of State, which is outlined, in some of its aspects, in this paper has met with consistent and warm support in the local Press. Only on the part of some of the leading men connected with the sugar industry has there appeared an inclination to hold that a very large additional amount must be spent on immigration of labour for the Coast districts simultaneously with initiation of railway construction. It will be a pity if an exaggerated anticipation of the effect of railway construction on the labour for the sugar industry should lead to opposition to a scheme which must ultimately benefit every section of the community, which is not likely to cause more movement of labour than the gold rushes of the past, and which should attract to the Colony tourists, many free immigrants, and far more labour than is likely to be drawn from the Coast estates by the work if the railway construction engineer refuses to pay a daily wage much in excess of the ruling rate in the Colony. The hinterland of British Guiana is a fair and fertile country, of vast extent, capable of growing all tropical products, and if the rules of tropical sanitarians are observed, and subject to the universal limitation regarding the residence of white races within a short distance of the equator except at high elevations, a healthy and pleasant country to live in."



PONIES AT DADANAWA. *[Photo by His Excellency.]*



MOUNT KUMARKA, RUPUNUNI RIVER. *[Photo by His Excellency.]*

“TIMEHRI” AND DEVELOPMENT.

By THE REV. J. AIKEN, M.A.

After a quarter of a century of discussion the time seems to be near when the dreams of the last two decades will crystallise in some definite form. It is true that the sanguine have had hopes of this sort before and that those hopes have been disappointed, but it does not need an excessive optimism to go the length of saying that something nearer a practical proposition in railways to the interior has been evolved. Certain shibboleths circumscribing the area of support to the scheme have at least been got rid of. The Bartica jump off, for example, obsessed for long earnest railway projectors. Even if there had been stronger arguments from an engineering point of view than fuller enquiry have established for this starting point, the vested interests endangered by the threat of a new centre of traffic were strong enough to warn the practical man of the opposition with which proposals with that base in view would meet.

In the earlier years of railway projection in the colony this factor did not appear so important. In the first excitement of gold exploitation it was expected that the local mercantile community would be so deeply interested in the mines that other interests would be dwarfed by the immediate object of access, by some means, to the golden land from which colossal fortunes were to be easily won.

Time has brought the gold-fields into more correct perspective. While it has added new arguments for the opening up of the interior, it has brought home the necessity of a comprehensive view of all the economic factors in planning the means to this end. We need not conclude that at the point now reached railway planning has attained the ideal of adjustment to all interests, or that wisdom will die with us, but at any rate we may reckon that, allowing for inadequate knowledge of the hinterland, the proposition of railway building has assumed a sane business-like form in the minds of those who are wrestling with its problems.

It may be some help to review the steps by which the schemes now before the colonists have been reached, and to recall the names of the men who have contributed their quota to the discussions.

The last Spanish expedition in search of Eldorado was in 1775. The first gold prospecting in less romantic but more practical lines was about 100 years later, when Caman and D'Amil struck pay dirt in the Essequibo and Cuyuni. The Spaniards of course did not think of a railway to Eldorado, but it was not long before their more modern successors did. Between 1884 and 1891 the output of precious metal rose from 250 ozs. to 101,298 ozs. per. annum, and in 1891 at the instance of the Royal Agricultural and Commercial Society a “Commission on the opening up of the country” was appointed.

The work of this Commission resulted in a Majority and a Minority Report. Bartica to Mazaruni was advocated in the former, while Demerara to Potaro was the minority's fancy. The history of discussion since has been pretty much a chewing on this bone of contention with *ad libitum* variations on the large areas of fertile regions to be opened up for the profitable cultivation of a variety of products and, in recent years, the introduction of the "Through Railway" idea, the objective of which is, in the immediate future, Manaos in Brazil and ultimately Buenos Ayres and Mt. Stokes.

The issue of the discussion of the Reports of the Commission at the Society's meeting on 14th July, 1892, was a resolution admirably framed to suit both parties and leave the burden of decision on the Governor and his advisers. It ran as follows: "That this meeting of members of the Royal Agricultural and Commercial Society having discussed the Report of the Commission on the opening up of the country, forwarded by the Government, and being fully impressed with the difficulties of transport to the gold-fields of Potaro and Essequibo, desire to urge upon the Government the pressing necessity of immediate measures for providing convenient, safe and rapid communication with the said gold-fields and that a copy of this resolution be forwarded to the Government Secretary."

The sequel to the Report and resolution was the commencement in the following year of a survey of a line from Bartica. The falling-off of the gold output in 1894 and the depression of general business in 1895 gave pause to further efforts.

In January, 1896, however, Sir Cavendish Boyle, as President of the Society, was able to take an optimistic view of the prospects then opening in his address and, in announcing the immediate commencement of the Rosignol Extension of the East Coast Railway and the Vreed-en-Hoop-Philadelphia line, referred to "other schemes commenced or shortly to be commenced to facilitate travel in the interior; roads have been approved and begun, and surveys of other and even larger and more important works are either being carried out, or are to be carried out very shortly." Doubtless the development adumbrated in this passage was intended to supply the want which he expressed in a previous passage "We want to see other industries (than sugar) implanted and flourishing in our midst; we want to see men taking advantage of and profiting by the lavish gifts that nature here spreads before them . . . and the utilisation of the vast stretches of country awaiting their labours."

There was at this period no doubt in the minds of colonists of the fertility of "those vast stretches of country" as yet unexploited. Dr. Morris's statement that he knew "nowhere of such an extensive area of rich and fertile lands, with a comparatively healthy climate and within easy reach of such good markets as these Crown lands of British Guiana," expressed the opinion of everybody.

In the following year, however, an authoritative statement by the Government Analyst of British Guiana flatly contradicted this roseate view.

In his Presidential address to the R. A. and C. Society on December 16th, 1897, Professor Harrison alluded to Dr. Morris's statement thus: "The latter (Dr. Morris) has alluded to the great fertility of the interior of the colony. I do not know on what grounds he based his supposition of this great fertility. I can find no grounds for believing that in a country having the geological structure the interior of this has—sandstones and some hundreds of conglomerates, archæan granites, gneisses and crystalline schists—great tracts of land of exceptional fertility will occur, although possibly tracts of limited area may occur in valley lands or river bottoms or on the lines of dykes of certain classes of intrusive rocks. I may mention that, as far as our analytical examinations of some hundreds of the soils of the interior and seaboard extend, no indication of exceptional fertility in soils, other than those of our alluvial coastlands, have been obtained. All points to the wisdom of our Dutch predecessors in ceasing their attempts to raise agricultural products on many of the soils of the interior."

Some years later he was still of the same opinion and appears to have discouraged the hope that rubber could be grown in the colony. A statement to this effect appears in a letter from Mr. W. K. McCarthy published in the "Chronicle" of 25th May, 1907.

In 1907, however, Professor Harrison had found reasons to consider his earlier opinions erroneous for, in an address on "British Guiana and its Resources" given in the rooms of the West India Committee on 25th April of that year, he confirmed Dr. Morris's words which he had contradicted in 1897:—

"Large areas of lowlying land in British Guiana," said the Professor "are ideally suited to the growth of Arabian coffee. During his visit in 1897 the present Imperial Commissioner of Agriculture, accompanied by the writer, went over some of the coffee estates and expressed his opinion that in no part of the world which he had visited did Arabian coffee grow and flourish as he saw it doing in British Guiana, nor was it anywhere else so free from disease.

"There are great areas of land, a few miles up the lower reaches of the rivers, where good drainage can easily be secured, and upon them cacao flourishes.

"There can be few, if any, places better suited from soil and meteorological conditions than the coastlands of British Guiana for the cultivation of this fruit (bananas).

"Limes grow remarkably well on all the lighter soils of British Guiana, especially on those at some little distance from the sea from ten to thirty miles from the coast where cacao and coffee flourish; oranges, especially Tangerine oranges, and other varieties of citrus fruits grow very well and yield excellently flavoured fruit in abundance.

"It is very much to be regretted that several years ago when Sir William Thistleton-Dyer suggested that attempts should be made in planting rubber-trees in parts of the forest lands of British Guiana, the great value of his advice was not appreciated and the opportunity was neglected. All that can now be said is that many parts of the colony appear to be almost ideally suited for the cultivation of certain kinds of rubber trees.

". upon them (the very extensive savannahs of the interior) great developments may take place in cattle-ranching."

Meantime, the opinion expressed in 1897 that there was "no indication of exceptional fertility in soils other than those of our alluvial coastlands" had gained wide publicity, and a more sweeping application than it really connoted. Agricultural papers published in tropical lands competing for capital in rubber growing made effective use of it to divert enterprise in their own direction and gave to the rather incautiously expressed dictum undeserved weight.

In the colony itself there were many who estimated the opinion at nearer its true value. The theory was traversed by the evidence of a few who, like Mr. Melville, had practical experience, or like Mr. McTurk, extended and intimate acquaintance with the conditions in the interior.

Professor Harrison's conclusions had therefore comparatively little weight locally and did not much discourage those interested in the colony's development, and a resuscitation of the Interior Railway project took place in 1902. In that year Mr. Luke M. Hill as President of the Royal Agricultural and Commercial Society read a paper on "The Possibilities of Railway Development in British Guiana."

The resources to be developed now included, besides the more profitable exploitation of the established gold and diamond fields, the opening up of unexploited mineral areas, access to the forests in which balata and other gums were already yielding profits, in spite of the enormous difficulties of the journey to and fro, and huge quantities of valuable timbers were known to exist, beyond the falls and obstructions to the waterways which effectually blocked their profitable working. The pastoral possibilities of the savannahs and the agricultural value of great areas at varied elevation suited to a variety of economic products such as tea, tobacco, fibres, native cottons, coffee, cocoa, and tropical fruits came into the pur view.

The development of trade with the Rio Negro and upper Amazon district, almost inaccessible by way of the Brazilian trade routes, and the expansion of the rubber industry in that region where enormous expansion is almost certainly possible and would follow on cheap and rapid transit, became a prominent factor in the discussions, while the visions of a great trunk system for South America, with termini at Georgetown in the North and Buenos Ayres in the South, began to take shape. The point sought for the first stage in this colossal project was

one within easy reach of Manaos, the chief town of Amazonas province and the neighbourhood of the junction of the Ireng and Takutu rivers has almost unanimously been fixed upon as best meeting the requirements on both sides of the Guiana-Brazil frontier.

The question of routes to this point at both ends opens up a field of discussion and it is interesting to trace the gradual progress towards definite ideas. Topographical knowledge has throughout been meagre to a degree. The valleys of the great rivers and a mile or two on either side of them, certain tracts like the Bartica-Caburi and the Potaro-Konawaruk roads, the lines cut from Tumatumari to the Semang-Mazaruni junction and the Karamang path afforded until recently the only data on which an estimate of the nature of a line for railway construction might be founded. These all lie within a small area of about 3,660 sq. miles between the arms of the Mazaruni to the North and West and the Potaro-Essequibo system South and East and could only affect at most some 60 miles of the projected route for a trunk scheme, and some of the branches which might be thrown out to tap mineralised areas. A great stretch of unknown hills and valleys intervene between the end of this partially known line and the objective of a boundary railway on the banks of the Ireng River the course of which had been fixed by the Boundary Commissioners as the dividing line between Brazil and Guiana. Prominent points sighted from Yakontipu far to the West or Ayanganna and fixed by triangulation include up till the present time all that is accurately known of this region and, as a gentleman who has been prominent in advocacy of railway expansion remarked to me, many surprises may await one who with ideas formed on this data penetrates the recesses which intervene.

ROUTES.

As already indicated, the question which first arose in regard to railway development was in regard to a Demerara River or an all-Essequibo route to the goldfields. In rather a different shape from that which is moot to-day, there were the familiar alternatives with Georgetown and Bartica as base from which to circumvent the cataracts of the Essequibo as a first objective, and there were enthusiastic supporters of each route.

Soon after the report of the Commission on the opening up of the country was issued the chairman, Dr. Carrington, Attorney General at that time, who like his successor in office to-day was a vigorous advocate of progress in railway building, availed himself of the presence in the colony of Mr. Robert Tennant, who had come to investigate quartz mining prospects, and asked him to submit an opinion on the best way of opening up the known gold districts then being worked.

Mr. Tennant gave a detailed written report on the matter which was published in April, 1893. In this he said that to assume that the Demerara on one hand and the Bartica route on the other were the only alternatives was to reduce the broad question of Railway development to narrower limits than the wealth of the goldfields justified. These

warranted large expenditure and even the carrying out of *all the roads, portages, etc.*, which had been planned in the various schemes put before the public.

The first steps he suggested were :—

(1.) A road from the foot of the Essequibo falls to the head of them. This would serve instead of a railway from Bartica meantime, and would involve only 10 miles of road instead of 30 miles of railway.

(2.) Improvement of the portage of lower Mallali on the Demerara river and a road from the Demerara to the Essequibo opposite Omai on which a tramway could be laid. The total cost of this scheme would, he estimated, be about £30,000 sterling. In event of no more gold being found the tramway plant could be removed to some other route. The position of the road suggested was the Kunaparu path below the Great Falls on the Demerara about 40 miles due south of the present Wismar Railway, striking the Essequibo at a point within about 12 or 13 miles of the Omai Creek, which would be reached by launch from the terminus of the tramway. Mr. Tennant apparently preferred the Demerara in preference to the Bartica route to the districts named.

The final outcome of the 1892 Commission was the acceptance of Messrs. Sproston's offer to build a railway from Wismar on the Demerara River to the Essequibo opposite Gluck Island, above the Monkey Jump and Mayai rapids. A system of boats and launches running in connection with this railway have since its completion given access to the lower Potaro, Omai and Konawaruk.

The Government advanced to the contractors \$200,000 (£41,616 stg.), repayable without interest in 20 years, to assist in carrying out this work. This sum has since been repaid to the Government.

This railway has, as Mr. Hill remarks in his 1902 paper, "served and is still serving a useful end, although at the expense of well-nigh ruining the town of Bartica, which was designed by its natural geographical position to be the "jumping-off ground," so to speak, for the Essequibo, Mazaruni and Cuyuni districts. The Demerara-Essequibo railway must, however, rest content with its more or less evanescent life of usefulness as an aid in getting to the Potaro district, pending the construction of the great central trunk line from Bartica; as it seems to me like the bolstering up of a bad case to attempt to make it a sort of cross-country route to the Mazaruni diamonds fields through the Potaro and Couriebrong rivers with a portage of some miles to the head-waters of the Semang and down that stream into the Mazaruni as has been seriously proposed."

Mr. Hill urged against this route the repeated handling of goods between Demerara and Mazaruni as follows :—

"2 at Wismar, 2 at Rockstone, 2 at Tumatumari Falls (low-side), 2 at Tumatumari (topside), 2 at Couriebrong head, 2 at Semang head, and 1 at Semang mouth with possibly others at unknown falls and shallows."

Mr. G. V. de la Bastide's paper, which was read by the President, said that Mr. Hill had made too much of the transshipment or "handling" difficulty. He put the cost at Wismar at 6 or 7 cents per ton and at Rockstone at 10 cents per ton, this would give about 60 cents per ton in the various handlings detailed above on the route criticised by Mr. Hill.

Detailing the possibilities of further railway development Mr. Hill refers first to coast railways, the extension of the East Coast Demerara railway to Berbice, the Corentyne railway from New Amsterdam to Skeldon "already surveyed," a railway from Suddie to Devonshire Castle on the Aroabisee Coast of Essequibo and continues: "At the present time, however, the hopes of the colony centre in the successful development of its mineral resources, its gold and diamond industries, so our thoughts naturally direct themselves towards the vast areas of our hinterland with its possibilities of hidden wealth, and of which so little is known beyond the mere fringes of our principal waterways and even to that extent only in the last dozen years."

"Having so far accepted Bartica as the main *entrepôt* for the Essequibo, Mazaruni and Cuyuni districts, let us see how best to reach it from Georgetown, which, I assume will continue to be the chief port and capital city of the colony.

"First we have the existing Sproston's direct steamer route of about six hours along the West Coast and up the Essequibo river which, I venture to think, will be found to be the most convenient and cheapest mode of transport. As an alternative, however, we have a possible 40 miles extension of the West Coast railway around Parika and up the right bank of the Essequibo to a point opposite Bartica, whence passengers and goods might be transported across the Essequibo by steam ferry or a wire rope way elevated high above the river there being five loadings and dischargings (by the route) as compared with one by the steamer route."

"Leaving Bartica, the route of the proposed central trunk line would take an ascending curve round the back of Bartica Point towards the high land at the back of Kalacoon and thence along the ridge of the watershed between the Essequibo and Mazaruni Rivers; crossing the Potaro River just below the mouth of the Couriebrong close to Potaro landing, thence in a southerly direction crossing the Siparuni below the mouth of the Takoutu, or across the Purro-birro and the Rupununi Rivers and their tributary streams tapping the great Rupununi savannahs along the watershed of the Rewa River, crossing the Quitaro and Cassikitu Rivers to the upper reaches of the Essequibo close to the Brazilian boundary, a total distance of 420 miles Already a cart-road has been formed along the proposed route a distance of some 30 miles from Bartica."

"The first of the branch lines to be constructed would doubtless be one to the Mazaruni diamond fields, branching from the main trunk line 30 or 40 miles north of the Potaro, bending round towards the Mazaruni,

crossing the Semang and Karamang Rivers, skirting the Meruma mountains and touching the Mazaruni close to the mouth of the Merume River clear above the numerous and dangerous falls of the Mazaruni, the length of this branch being about 90 miles.

“Another main line about 140 miles in length might start from Cartabo Point, about eight miles above Bartica, traverse the watershed between the Cuyuni River on the right and the Mazaruni, Puruni and Cartoonie Rivers on the left tapping rich mineral country, on either side, and reaching on to the Venezuelan boundary close by the mouth of the Acarabisci River through which connection might be made to the Barama and Barima districts.”

He mentions, however, that this and the North West District are so accessible by steamer routes that no need for a trunk line exists for the lower reaches of the Barama and Barima Rivers at least.

Mr. J. W. Dorman, opening the discussion, did not agree with Mr. Hill as to Bartica being the natural “jump off” for a trunk railway. He regarded the inevitable result as being to make Bartica the main port of the colony and forecast great expense in buoying and lighting the Essequibo, erecting stores, wharves, etc. “Bartica would become the New York and Georgetown the Washington of British Guiana.”

“As a railway engineer, with a personal knowledge of a good deal of the ground to be traversed, I have no hesitation in saying,” he continued. “that the proper and natural extension of railways in this colony is to continue the West Coast Railway up the east side of the Essequibo River (with a station and steam ferry to Bartica which will then be reached in two hours from Georgetown) to the falls where it will cross to the west side and run up past Omai to near Potaro landing. From this there should be a branch about sixty miles long to the Semang River and thence about one hundred miles further to the boundary, where it would terminate at the Mazaruni River after running through the centre of the diamond fields. The main line would follow generally the valley of the Potaro to the 5th degree (latitude) and thence nearly due south to the valleys of the rivers Tisaling, Mahoo and Takutu to San Joaquim.”

Mr. G. V. de la Bastide, regarding the hinterland main line as a remote prospect, contented himself with “merely stating that, so far as one can judge at the present time of future development, Mr. Dorman’s scheme is the proper one both from an engineering and financial point of view.” He considered that particular districts should not wait on a main line but be immediately opened up and that “in undertaking the survey of the line of country between Tumatumari and the mouth of the Semang, the Government is doing the proper thing” and criticises adversely the proposition of a road from Bartica to the unobstructed upper waters of the Mazaruni. He thought “the surveys should.....be continued from Tumatumari southwards to Potaro Landing then northwards to Omai following the course the great trunk line would take. Then as finances permitted these lines could be constructed.”

As Mr. de la Bastide provisioned, nothing came at the time of the main trunk line proposals, and until 1908 nothing practical in the way of railway prospection was done. In April of that year Colonel Link representing the Colonial Rail and Tramway Syndicate offered on certain terms to raise the capital required for a railway to the frontier, inviting the Government to suggest the route “best calculated to advance the interest of the Colony.” With the draft concession sent in however a map was enclosed showing a line within some miles of which (to be determined by negotiations with Government) the line would run.

In their reply to the Syndicate the Government named the junction of the Takutu and Ireng Rivers as the probable point on the Brazilian frontier which such a line should strike.

In his despatch to the Secretary of State 30th April, 1908, Sir F. M. Hodgson lays down four possible starting points and routes as follows:—

“There are four starting points for lines into the interior, namely, (a) Georgetown, (b) Vreed-en-Hoop on the West Bank of the Demerara River and opposite to Georgetown. (c) Bartica, situate at the point where the Essequibo and Mazaruni Rivers meet, and (d) Cartabo Point, at the junction of the Mazaruni and Cuyuni Rivers.

“The proper starting point for all trunk lines into the interior is, in my opinion, Georgetown, which is so to speak the hub of the colony. for it is at Georgetown that nearly all the trade is concentrated and to and from which the greater bulk of it proceeds, where the merchants have their offices and where facilities exist for the loading and unloading of ships. I understand that Colonel Link is in favour of Georgetown. If Georgetown were adopted as the starting point, the route would lie along the right bank of the Demerara River through the Crown lands at the back of the estates bordering the river until Christianburg is reached, when it would be taken across the river to Wismar and follow the line of railway now existing to Rockstone. Thence it would cross the Essequibo River at Gluck Island and curving on the other side towards what is called the Bartica-Caburi road proceed southwards to the Potaro gold-fields and so on to the Brazilian frontier. But this route has one insuperable objection. Until it reaches Golden Grove (see “Chart of the Sea Coast of the Colony of British Guiana”) it would pass through private property, the cost of acquiring which would probably kill the enterprise. It is mainly on this account that Georgetown as the starting point for lines of railway to the interior has had to be discarded and must I think, be discarded now.

“The adoption of Vreed-en-Hoop as the starting point means following the existing line of railway which proceeds thence to Vergenoegen, then continuing that line along the right bank of the Essequibo River until “Monkey Jump” (shown in the recently published map of the Northern portion of British Guiana) is reached, taking it across the Essequibo River at that point and so to the Bartica-Caburi road. The principal objection to this route is that, if adopted, it would interfere with

the volume of traffic passing over the existing railway between Wismar and Rockstone and therefore adversely affect the lien which the Government has upon that railway. Moreover the existing line between Vreed-en-Hoop and Vergenoegen is a three feet six inches gauge line and the Concessionaires say that they will not be satisfied with anything less than the standard gauge.

“The third route is that from Bartica—a route with respect to which Your Lordship will be aware there has been previous correspondence. A railway taken from Bartica would follow the line of the Bartica-Caburi road (shown in the map of the colony dated 1902) pass through the Potaro gold-fields about Potaro Landing and thence following the line of what is called the Potaro Road proceed across the Conawarook River, and taking a line along the left bank of the Echilebar River get to the frontier, either at the point where the Ireng and Takutu Rivers join or at a point on the navigable part of the Ireng River above the junction.

“The first route would give a probable length of railway of 300 miles, the second of 280 miles, both inclusive of railways already in existence, and the third 200 or 210 miles.”

The fourth route was referred to in paragraph 16 of the despatch as “that from Cartabo point which however is not a route to the Brazilian frontier and therefore not to be discussed in connection with the proposals now under consideration.” This line carried to a temporary terminus on the Cuyuni 35 miles, would, said Sir F. M. Hodgson, “open up a valuable, in all probability a paying, district” and a road in first instance to Mara-Mara on the Puruni River would bring a further rich timber and mineral district into communication. The line indicated was the favourite scheme of the Governor at the time, who had a fancy for a Government built and owned railway and thought this comparatively small venture within the means of the Colony to carry through.

Colonel Link's proposals were rejected, and railways remained in the air, but in 1912 a railway survey was made from the Demerara-Essequibo Railway terminus at Rockstone through the country between the two rivers to the point where the Potaro flows into the Essequibo and thence across the Konawaruk district towards Kaieteuk fall on the Potaro River. The cost of the projected route was ascertained to be too great to entertain a project of railway construction on the line surveyed.

In July, 1912, an able article from the pen of a Member of the Railway Joint Committee, which was appointed to consider Colonel Link's and other schemes of railway construction, appeared in “Timehri.” The writer dismissed tourist and mineral possibilities from any serious influence on the policy of railway construction or the routes to be chosen. He sums up the position at that time in the following words:—

“The gold and diamond prospects mentioned so hopefully in the papers and discussions of 1902 have vanished into *die Ewigkeit*. The really important mines, at Omai, Peters and Barima, are no longer factors in the problem of the Colony. Enthusiasts with zeal not according to know-

ledge will still talk of building a railway to the Konawaruk, the Mazaruni or some other river to open up gold or diamond country, but it must be remembered that that way madness lies. Many deposits have been worked out and while we have no doubt that new deposits will be found as the country opens up, the deflection of the route of any railway because of any fresh reports should require most careful consideration.

"Gold and diamonds are generally capable of looking after themselves without any railway at all. By themselves they hardly justify a railway unless they give indications of having the permanency of a settled industry as at Kalgoorlie and Klondyke, rich alluvial finds are certain to be made but the whole geological formation of this part of the continent renders it advisable to discount enthusiasm as to our mineral resources.

"To what then do we look for remunerative traffic for a railway within the colony? Firstly, we rely on the certainty that we can raise hundreds of thousands of cattle, apart from tobacco, cotton and other produce, on the vast Rupununi and other southern savannahs. The northern savannahs around Rupununi are of scanty herbage and their soil, owing to their vast antiquity, is approximating to the old floor of the continent which the top of the Roraima plateau more closely represents. Millions of years of tropical rains have washed down the nutritive soil of these districts into the river valleys. The southern savannahs are of lower elevations, probably not exceeding four or five hundred feet above sea level, and are of a more fertile character capable of agricultural as well as pastoral developments."

"Thirdly, we rely on our inexhaustible forest resources in timber and balata. These are only at the very beginning of their development. The doubts recently expressed by a newcomer arose from inadequate acquaintance with the subject, the source of most of the gloomy dogmatism and of all the cynical pessimism under which the colony groans.

"Fourthly, we rely on the traffic which would come from the carriage of the present annual contingent of balata-bleeders and their supplies, nearly four thousand strong, even allowing for no increase, to and from Siparuni, Rupununi and New River districts, a number sufficient on any reasonable relation of future railway fares to present transport costs, to pay the amount of a guarantee from this source alone.

"Fifthly, we rely on the prospect of ultimately obtaining a considerable through traffic from the adjoining Brazilian savannahs, which are of vast extent and contain very large herds of cattle, from Manaos, the rapidly growing capital of Amazonas, and (if Georgetown rises to the height of its legitimate ambition so as to become, as Mr. Nunan prophesies, a great South American port) from Southern Brazil and from Asuncion, Buenos Ayres, Monte Video and Valparaiso.

"The fact that the State of Amazonas has twice granted a concession for such a line (*i.e.* from Manaos to the frontier) disposes of the question of local hostility. The Federal sanction to cross the reserved

frontier strips has never been withheld from any of the numerous contemplated international lines. . . . The idea of Brazilian opposition was another imaginary obstacle to the consideration of this question in the eyes of those unacquainted with the progressive character of our great southern neighbour. . . .”

On July 23rd, 1913, in his presidential address to the R. A. & C. Society the Hon. J. J. Nunan, LL.B., to whom, more than to any other single individual colonist, the colony owes the energizing of a new spirit of hope and the revival of aspiration after development, thus summed up the most recent views of the route and aims of railway expansion :—

“The actual amount unexpended of the \$20,060 voted in 1910 for a railway survey to Kaieteur is only \$4,374 but there would be no difficulty in securing an adequate vote. Your Excellency has made public your intention of visiting the Rupununi in September in company with an experienced railway engineer so that part of the scheme is in a fair way to realization. The survey has at least made clear the fact that a tourist railway to Kaieteur is beyond our present resources. No doubt it has also increased the limited geographical acquaintance which many people possess of the colony in which they were born and bred or in which they earn their living. The fact that the Combined Court ever thought such a scheme feasible shows how limited the original stock of knowledge was, but it is too late for reproaches now. Nobody who ever studied the question expected anything but the actual result. The possibilities of a metre gauge line starting from Georgetown passing up the right bank of the Demerara River crossing the Essequibo on the ledge of rock near the Siparuni mouth and reaching the savannahs by the Buro-Buro river valley in touch with the contemplated Brazilian line from Manaos are quite another subject of investigation. But pending the ascertainment of the data we can only speculate.

“With these preliminary observations I now declare the subject open for discussion, viz. : ‘Whether the colony can be developed without fresh taxation.’ I hope the speakers will remember that the Government alone cannot do everything and that it is only by the loyal and friendly co-operation of everybody in the colony, Government, Legislature and people, that our problems can be solved. I may mention that an increase of our present revenue by seven per cent. from any cause would mean a return of something over £40,000 or enough on a normal or even on the present market, to secure a development loan of one million sterling.”

Sir Walter Egerton whose appointment as Governor has given to the forward movement the strong support of an eminently practical and progressive spirit in high places, speaking on the discussion which followed said :—

“The question of this interior railway was a very difficult one. The first thing an opponet would say was, having made your railway what traffic are you going to get from it? Well, he was afraid all they could say to him at present was that they should hope that on its way to the

savannahs it would pass through lands from which timber might be taken. They were fortunate in having here the best timber in the world and they could add to that that the savannahs already supported a large herd of cattle and were capable of supporting a very much larger number, if there was any prospect of selling them when they were brought into existence, and they could add that, in addition to the savannahs on this side, there were savannahs on the Brazilian side and doubtless cattle from those savannahs would be offered for sale, if there were means of getting them down to our coastlands. He saw no reason either why, if these savannahs were opened, they should not breed horses there, not for racing, but he did not mean that that would not be a profitable development, although he had no doubt—he saw a prominent member of the racing club sitting quite close to him—if the savannahs were opened, other owners than Mr. Flood would breed horses for racing purposes, but he would rather see horses bred there for ordinary commercial use and he should like to see sugar planters breed their mules there, instead of importing them from the Argentine and New York. He was going up to the interior with the hope not to see the nakedness of the land, but its fertility. What struck him in all the talk that had been about development was that no one had faced the problem of submitting a proper scheme. People talked vaguely about a railway to the interior, but they wanted to settle, and it was not an easy matter to settle, where that railway was to go and where it was to start from. There were other places which if they had to begin anew they might without much hesitation say were better places for the starting off point of a railway, but they were not to forget what they had locked up in Georgetown and what loss would be caused to the inhabitants here if they started a new capital in some other part of the coast. They must not start a railway without being quite sure where they wanted it to go and beyond that what they could get on the way in which they wanted it to go.”

The reconnaissance foreshadowed has since been carried out. His Excellency, accompanied by Mr. E. M. Bland, a railway engineer of large tropical experience, made an itinerary over the route outlined and in the despatch and report published in February, 1914, embodied his conclusion in favour of a line from Georgetown up the East Bank of the Demerara rivers, crossing a little above Wismar thence to the East Bank of the Essequibo River near the Potaro mouth, on to Kurupukari rapids where the Essequibo should be crossed, then by a line south of the Siparuni and Burro-burro to the mouth of the Ireng river on the Brazilian boundary. Lines of 20 inch gauge from Potaro to Kaieteuk and thence to the upper Mazaruni, Cuyuni and Barama are also recommended in His Excellency's Despatch.

A recent conversation with a gentleman who has been located in the Siparuni-Echilebar district for 3½ years, and whose journeyings have crossed and re-crossed a considerable expanse of that district, leads me to believe that a route to the north of the Siparuni may offer advantages of easier country, more fertile soils and richer mineral possibilities than

the route projected in Mr. Bland's report. Apart however from minor alterations of a few miles on either side of the main line now traced, no great departure is likely to be made in the future from the route indicated by Sir Walter Egerton for a frontier railway. A recent report of gold found near the Rupununi head-waters will not influence the question. If the Ireng mouth is once brought within ten hours of Georgetown the gold deposits long known to exist in the upper Rupununi, Berbice and New River districts will all be within sufficiently easy reach to be fully tested.

The long series of discussions has at any rate brought us to a definite general line with a terminus which opens vistas of future development to the practical imagination.

GAUGE OF RAILWAY.

The earlier discussions already cited for a long time hovered round the possibilities of tramways or light railways, with a view to the cheapest possible means of access to the gold-fields being rapidly constructed. We have travelled so far from the limited outlook of 1892 in the long years of hope deferred that the merest reference to the tramways or 2'6" gauge railways of the progressives of that time is sufficient.

As the writer of "Railways Ten Years After" in "Timehri" July, 1912, says: "Although some of the remarks of the writers and speakers of 1902 are of purely historic interest (for instance the adoption of the Lartique system could no longer be seriously advocated and no other monorail system was found sufficient favour up to date) the whole discussion contains many features of permanent value."

"The question of gauge for a trunk route would appear to be now settled by the insistence on the metre gauge in the Brazilian Railways. . . . that standard (the metre gauge) would appear to be a compromise which would have met the views of Messrs. Dorman and de la Bastide who were in favour of light railways which can be widened with comparative ease and cheapness should the traffic render it desirable.

"The standard gauge of 4ft. 8½in. such as Mr. Luke Hill and Colonel Link advocated, may now be regarded as out of the question for any railway into the interior."

Finally the metre gauge is adhered to in the report by Mr. E. M. Bland.

COST OF RAILWAYS.

The very important question of cost is one on which many opinions have been given and in the absence of any reliable knowledge of the engineering problems to be solved in the construction of a railway all may be taken as more or less partially informed estimates, at least up till the latest one, data more or less complete for which has been furnished by the reconnaissance made by Sir Walter Egerton.

Mr. Robert Tennant in 1893 estimated for the Demerara-Potaro line (East Bank of Essequibo) £3,000-£4,000 per mile for an ordinary gauge railway.

In 1896 a line surveyed from Cartabo westward for 35 miles was submitted to a consulting engineer in London who estimated the cost on the data furnished him at £6,239 sterling per mile for a 2ft. 6in. line.

Mr. Luke Hill in 1902 reckoned on a million and a half sterling for 420 miles from Bartica to the source of the Essequibo river and a half million sterling for a Cartabo-Puruni line 140 miles in length. These figures work out at about £3,700 and £3,500 per mile for a 4ft. 8½in. gauge which he proposed.

Mr. Dorman put the cost of a 3ft. 6in gauge at £1,500 per mile, while Mr. de la Bastide calculated £2,500 for that type of railway and £1,800 for a 2ft 6in. gauge. The same authority put a standard gauge line at £6,000 per mile.

The writer of "Railways Ten Years After" considered that a line "tapping the savannahs and aiming to link up with a line from Manaos would barely exceed 300 miles and could be built of a metre gauge for 1¼ millions sterling."

£8,000 per mile for a 200-mile railway was put by Colonel Link as the maximum cost of a standard gauge line running to the boundary by a route undetermined but with a probable starting point at Bartica.

Mr. Tew's estimate for the Rockstone to Konawaruk line was £7,500 per mile without cost of bridging the Essequibo.

The average old colonist with ponderous gloom puts the cost per mile of any gauge of railway from anywhere in the colony to anywhere else at £15,000-£20,000 a mile and bankruptcy to follow.

Neglecting these last-mentioned humourists, we may take it that on surveyed lines through the most difficult regions of Guiana, the maximum cost of railway building to metre gauge is, wherever a competent engineer had data for calculation, put at from £6,000-£7,000. A main trunk line through the easy country mapped out for a frontier railway including the one heavy peice of engineering required to bridge the Essequibo may be carried out at one-half that rate.

Sir Walter Egerton's despatch of February, 1914, names £3,500 as the approximate cost made up as follows :

ITEM.	COST PER MILE.
Survey... ..	£ 30
Earthworks and Clearing	525
Bridges and Culverts	600
Permanent Way and Ballast	1,200
Stations and Quarters	200
Station, Machinery and Workshops	100
Rolling Stock	500
Telegraphs	40
Engineering and Administration	270
Contingencies	35
	£ 3,500
Estimated Length of Line	380 Miles
Total Cost	£ 980,000

For a light railway from Potaro, opposite a point where the main line runs very near the East bank of the Essequibo to the Upper Mazaruni, which Sir Walter Egerton considers strongly advisable, a 20-inch Decauville line is, he thinks, sufficient meantime and the cost he puts at £1,000 per mile, a total of £50,000. As this line would run through country only very partially known, the estimate of cost has not perhaps the same value as that for the main line.

The million and a quarter estimated in the despatch may be taken quite definitely as very nearly the sum required to carry a line to the Rupununi to a point short by 50 miles of the boundary terminus, and to provide feeders, light railways and roads, and an allocation for settling immigrants on lands in the interior. The mists which gave such scope for talk about insuperable obstacles, costly difficulties, bottomless swamps and impenetrable jungle have been, if not dispelled, at least driven into the stupid recesses of minds inaccessible to new ideas. It is no longer a badge of social respectability to advertise a cynical contempt for projects of development and the Colony's power of carrying them out. Water Street and the more considerable local representatives of the sugar planters have joined the prophets, the few who remain invincibly bucolic in their parochialism of outlook are entirely negligible so far as influence on the future of the Colony goes. The chorus of the enlightened sings with Haydn.

“ Now vanish before the holy beams
The gloomy dismal shades of night.
Now chaos ends, and order fair prevails
Affrighted fly hell's spirit black in throngs
Down they sink in the deep abyss of endless night.”

WAYS AND MEANS.

The question of ways and means is not the least important of those which remain.

The earlier projectors of railway schemes contemplated evidently Government loans for the limited propositions then in view. In 1902 however circumstances had altered and Mr. Luke Hill considered the only possible way of accomplishing the opening up of the interior is by means of liberal concessions in land and mining rights to outside capitalists. Mr. Dorman considered on the other hand that “It is quite certain that outside capitalists will not be tempted by land concessions and mining rights only, however liberal they may be and that nothing but a cash guarantee, which the colony is unable to afford, will secure the millions necessary for such a gigantic scheme.”

That Mr. Dorman was right appeared in the offers subsequently made by promoters who visited the colony. The most substantial of these, that made by Colonel Link, a man of comprehensive business perception, backed by some of the great names in railway and general finance, asked for a land grant totalling over 2,000 sq. miles (1¼ million acres) in addi-

tion to guarantee of $3\frac{1}{2}$ per cent. for ten years on the capital of one and three-quarter millions reckoned on as the cost of a railway. The Government was, however, to have, in return for all payments made in name of interest, railway stock of a corresponding face value allotted to it. In event of a gradual development which not before the end of ten years would have put the railway on a paying basis, the colony would, according to Sir Frederick Hodgson in his despatch of 30th April to the Secretary of State, have had £668,500 stg. of railway stock, of more or less value, according to the success of the venture, which might either be applied to the reduction of the amortisation bond issue, which Colonel Link's scheme suggested, or be retained as a profitable investment of colony funds and for the interest, not, however, a controlling one, which it would give the Government in the direction of the railway's affairs.

The author of "Railways Ten Years After" in commenting upon this says: "It is at all events certain that no future proposals, if emanating from financiers of standing, are likely to make smaller demands upon the colony's confidence in its own resources. Indeed the indications all point to the fact that if the railway into the interior is to be undertaken by independent capitalists, they will share the scepticism of the leading colonists, so far as to require the securing of a sufficient rate of interest for a much longer period. The rate guaranteed by other South American Governments is five per cent. for twenty-five years. . . The Colonial Office has in the present year guaranteed four per cent. for ten years to Messrs. Pauling, the contractors for the Cape to Cairo Railway, for the extension of the Shire Highlands (Nyasaland) Railway."

A country in which the inhabitants are disinclined to have any financial stake in development projects, is not likely to find many mad capitalists tumbling over one another in a rush to spend money within its borders. From the above extract it will appear that the terms offered in the Link proposition were at least worthy of more consideration than they received. Indeed the attitude of the Government of the day gave some justification to the comment passed upon the matter by "The People" newspaper of 6th May, 1908. "It is evident that the assumption on which the Government's conditions were drafted, was that all the gentlemen connected with this proposed Railway scheme are out on 'ticket of leave,' and are therefore to be carefully watched. Further that their domicile is a land unregulated by any kind of law which would guarantee the validity of a promise. We think in regard to both these points the Government is wrong. We understand as a matter of fact that against at least several members of the Syndicate there is no previous conviction and we also believe that a recently framed Company Act is in existence in the United Kingdom which contemplates and provides for just such defalcations as those which Clause 9 (of letter Government Secretary to Colonel J. W. Link 30th April) apparently is framed to guard against."

From the Government side the negotiations were certainly not carried on in a way to elicit any definite finding of the best terms on which a

railway might be attained by means of outside capital and thus no light is thrown on present propositions.

Of other methods there are practically two possible. The first is that adopted by the Colonial Government in respect to the Wismar Railway, by advancing the capital to the contractors, repayable in a term of years. This may be varied by a cash grant, plus an advance, plus land grants as in the Canadian Government terms with the Canadian Pacific Railway

The second is a Government built line which may either be worked by the Government or leased to a Railway company at an annual rent for a term of years, as in a portion of the cross-Canada Railway worked by the Grand Trunk Pacific Company.

In the case of British Guiana the options narrow themselves down probably to a subsidised or a Government built and run railway.

In His Excellency Sir Walter Egerton's dispatch the latter is the basis of his proposition coupled with a scheme by which Imperial Government advances the money and a grant to meet deficit on working expenses until such time as the financial position of the colony enables it to assume the burden.

The Sub-Committee of the Committee on Railways recently appointed makes the following amendments on this proposal in a memorandum which will be included in its report :

1. Deficit of first five years to be charged to capital account.
Deficit on working expenses thereafter, if there is any, to be met out of current revenue.
2. Railway Loan from Imperial Government (1½ million stg.).
Interest for six years to be advanced by Imperial Government.
Half interest for ensuing six years to be advanced by Imperial Government.
After 12 years Colony to pay interest and deferred interest plus Sinking Fund on whole amount.
3. Development Loan from Imperial Government (three-quarter million stg.). Interest for three years to be advanced by Imperial Government. Thereafter Colony to pay interest deferred interest and Sinking Fund. Four or five years may be fixed instead of three.

The development fund referred to is intended to provide for the introduction of 5,000 immigrants annually (families or possible families stipulated), to replace the labour attracted to the railway and supplement the present indenture.

It is pointed out that in five years there would be 25,000 adults, mostly married couples, in addition to the children each paying on the usual average (Population : 300,000. Revenue £3,000,000) \$10 to the

public revenue, *i.e.*, a total of \$250,000 per annum or more than double the amount of the annual interest and Sinking Fund on development loan, which would after three years require \$105,740 to meet the charges created, on the basis of \$600,000 to which the three-quarter million allocation has been amended by the Sub-Committee. This would leave of revenue from the new population about \$150,000 of the \$387,000 required to pay interest and Sinking Fund on the Railway loan. In this calculation the additional revenue from railway staff and immigrants entering on their own charges, attracted by the railway and from any traffic which directly arises from the existence of a large undertaking, is not taken into account. That it would be a very considerable contribution to the charges on a railway there is no doubt.

In conclusion I emphatically agree with the Sub-Committee that questions of harbour improvement and sea defences should be kept separate and the decks cleared for the main action. Important as these things are, to complicate the big issue with these or constitutional questions is, more than likely, to hold back any steps in advance for another half century. The hesitating timorous temperament which has been a characteristic of the colony for a half century is for the moment galvanised into a hopeful vigour which encouraged and energized by an influx of new activities might permanently shake up a land too lotus-eating in the past for its health. With neither loss to fear nor profit to hope for, Guiana has drowsed, indifferent to the stream of life and movement in the big world around. To be forced into the stream in some way is the immediate and only hope for the rebuilding of a people with energy enough to get out of the way of the motor-bus of progress when, as it must finally, it sweeps this way steered by men who want to get there and will not swerve for every sleepy donkey which suns itself on the road. We have the choice at present of making way for ourselves, but the day of opportunity may pass and another day come when we shall have to make way for better men.

As the despatch of His Excellency Sir Walter Egerton and Mr. Bland's report are at the moment of great immediate interest, I append the following extracts, together with the Report of the Committee on Railway Matters.

SIR W. EGERTON'S DESPATCH, 5TH JANUARY, 1914.

Georgetown as terminus:

3. Georgetown, the capital of the colony, contains one-sixth of the whole population. It is by far the best and safest port on the whole coastline of British Guiana; it is situated very nearly in the centre of that coastline, and the country for twenty miles east and west of Georgetown is the more thickly populated. Unless natural conditions are such as to make the cost prohibitive, any railway system should be based on Georgetown, and the probabilities of the development of paying traffic must be greater if the terminus of that system is in Georgetown. It so happens, moreover, that although, on a superficial glance at the map,

Bartica, situated at the confluence of the Essequibo, Mazaruni and Cuyuni rivers and some forty miles from the sea, looks a better starting point, this is not the case, for the hinterland there runs into mountainous country and an interior line to avoid the mountains would have to cross the lower Essequibo. The Essequibo bar is no deeper than that of the Demerara river and the maximum draught for ships ascending as high as Bartica is 16 feet, the same as for Wismar, while the rocks in the Essequibo render the approach to Bartica less safe, so that ships of this draught sometimes load five miles below Bartica. As a port, therefore, it has no advantages over Wismar and is inferior in every way to Georgetown. Further, Wismar, 65 miles up the Demerara river, is much nearer the objective. From Georgetown it has now also been ascertained that a line can be built practically due south right to the Brazilian border without encountering any difficult country, while the short trace surveyed by Mr. Tew in 1912-13 from opposite Rockstone, on the left bank of the Essequibo above Bartica, passed through by no means easy country and ran into a *cul de sac* of mountainous country on the Potaro. Moreover, from the route now recommended branch lines can be run westwards from Potaro mouth through mineralised country connecting the watersheds of the various rivers, from the Essequibo, at Potaro mouth, to the navigable upper Mazaruni,—thence to the Cuyuni, the Barama and the Barima, whenever funds are available and the development of gold and diamond mining enterprises makes financial success probable. At first the various linking up lines could very well be worked by means of ferries, but, from the rocky nature of the river beds and their shallowness in the dry season, bridging cost, even of the Essequibo at Potaro mouth, is not likely to be excessive.

[Note.—The distance from Potaro mouth is from 45 to 50 miles to Turesi on the upper navigable Mazaruni. This line would place Turesi within two days of Georgetown. It is now a dangerous river journey of three weeks. Thence the Mazaruni is navigable safely for boats and small launches for over 100 miles and easy access would be given to diamond and gold deposits now unworkable owing to excessive cost of transport. In addition much valuable gold country situated below Turesi would be brought within reach of cheaper transport, for the boats would descend full and toil up river again empty. On goldfields all the heavy transport is *to* the fields. If this first connection with the upper Mazaruni is made, it will facilitate subsequent extensions from a suitable spot, above or below Turesi, across the Puruni valley to the Cuyuni at or below Pigeon Island landing, the whole of this line also going through highly mineralised country. A further extension to the Barama would pass through the very rich Pigeon Island District from which so much gold has been extracted in 1913. Light lines of decauville type and some 20-inch gauge should not cost more than £1,000 a mile, and will easily carry all the ordinary traffic for some years. With special rolling stock they can be used to transport mining machinery in heavier units than is now possible by boat over the cataracts and rapids which abound in our rivers. They can also be built with sharper curves and lighter earthworks through country where it would be difficult and expensive to construct a meter gauge line and the permanent way can be easily taken up and relaid on another trace should occasion require it. Such lines cannot be built now, owing to the prohibitive cost of transport to point of

commencement, and without the connection to the coast which will be afforded by the trunk line would lose the greater part of their usefulness. Lines of this description connected with a trunk line are also much more independent of any particular mining centre, for to whatever portion of a river valley mining activity changes, they will still be made use of.]

ROUTE OF THE RAILWAY.

The section from Georgetown to Wismar, if built, would run up the right bank of Demerara river, but at some distance back from the river, through thick forest. The Demerara would be crossed just above Wismar. From Wismar the railway would continue to traverse forest land deviating a little from the direction of its objective to the right bank of the Essequibo at, or near, the mouth of the Potaro river. The object of this diversion is to serve the interests of the second largest gold mining district in the colony, that comprised in the valley of the Potaro and Konawaruk rivers, the bases from which the existing two prosperous mines are being worked, being only a few hours from this point. Incidentally it would shorten and make much easier the journey to the great Kaieteur Falls and probably lead to the amelioration of the conditions of travel over the remaining forty miles of the journey up the valley of the Potaro river.

LINES TO MINERAL DISTRICTS.

19. Potaro mouth station of the main interior line should become the great junction for other subsidiary lines. From it should radiate a short line up the Tiger Creek valley, on right bank of Potaro, to serve the Minniehaha, and if possible, the upper Konawaruk mining district, with a continuation to the Kaieteur Falls and plateau. From here also, as I have suggested above, sectional light lines should be run to the upper navigable portion of the Mazaruni, to the Cuyuni and to the Barama—all lines running through highly mineralised districts where gold and diamonds are being, and have been, worked for a long time. These subsidiary lines I strongly advocate being built, in the first instance, of narrow 20-inch gauge and very light construction. (Decauville type burning wood cut locally.)

20. From Potaro mouth the line would continue to run between the Demerara and Essequibo river valleys, still through forest, until it crosses the latter waterway probably at the Kurupukari rapid where Mr. Bland proposes the Essequibo should be bridged. Up to this point, about 175 miles from Georgetown and 110 from Wismar, the line would traverse valuable timber forests from which greenheart timber has only been extracted in the lower sections and only there where water transport is obtainable close to the trees. After crossing the Essequibo, and running between the Burro-Burro and Rupununi rivers some fifty miles more of forest, probably rich in valuable timber, would be passed through before the first, Northern, or Annai savannah is reached, then after skirting for fifteen miles the eastern limit of the great Pakaraima mountains, through the narrow strip of forest lying between the mountain country and the

Rupununi river, the larger middle, or Takutu savannah would be reached at Tirke village. From here to the Brazilian boundary at the mouth of the Ireng the line would run over the slightly undulating savannah country.

THE BRAZILIAN PROJECT.

Proposals for the construction of the Brazilian portion of this joint line have long been under discussion in Brazil, and a concession was recently actually granted to a firm of capitalists for the construction of a line from Manaos to Boa Vista, situate near the colonial frontier and the administrative centre for the northern portion of Amazonas. The concession was, however, very soon after surrendered, it is said, owing to the popular outcry in Manaos against the terms conceded.

The apparent distance by the best maps obtainable here between

(a) Manaos and the nearest point of the British Guiana boundary in the extreme south of the colony is about	...	300 miles.
(b) Between Manaos and Boa Vista	... ..	400 ..
(c) Between Manaos via Boa Vista to British Guiana boundary on Takutu near Roman Catholic Mission	...	460 ..
Distance from (c) to Wismar about	... ..	280 ..
Through distance, Manaos to Wismar via Boa Vista, say	... ..	740 ..
Or to Georgetown	... ..	800 ..
Time of transit, Georgetown to Manaos by railway at 20 miles an hour, 40 hours; at 25 miles an hour, 32 hours.		

A through railway to Manaos is, in my opinion, very desirable, but at present, we can only consider the question of the British Guiana section, although that section should be constructed so as to facilitate future extension to the south.

FINANCING THE RAILWAY.

How can the Colonial railway be built? There seem to be three propositions to be considered:

- (a) Construction by private enterprise.
- (b) A Colonial railway and
- (c) A line constructed, like the Uganda Railway, with funds supplied by the Imperial Government coupled with an annual Imperial grant to assist the colony to meet the cost of working and the interest on loan.

This last scheme seems to me, after much thought, to be the only practical solution and one that is likely to receive much more sympathetic consideration now that the advantages of the development of each unit of the Empire to the Mother Country, and to the Empire in general, are better realised. How impossible any development of the fair and fertile interior of the colony is at present may be at once gathered from the

single fact that the cost of my recent two months' expedition to the interior amounted, for transport alone, to \$4,000 or £800 for five Europeans, and this total did not include the cost of their messing but only the food for the boats' crews, &c. The party did not travel in nearly as great comfort as the Colonial Governments in West Africa and their European officers consider essential for the preservation of health.

It may perhaps be looking rather far into the future, but at any rate I am not the first to put forward the view that if a line from Georgetown to Manaos is constructed, this route may, and probably will, form a section of a great North and South Transcontinental Main South American line similar to the Cape to Cairo African line, connecting Buenos Ayres in the Argentine with Georgetown. The direction is due north and south, both termini lying close to the 58th degree of west longitude, and Manaos lying almost directly between them.

The lines in the Argentine Republic and Brazil are being rapidly linked up, and the completion of such a main line is probably not as difficult of realisation, with similar advertisement, as that from the Cape to Cairo.

Geographically, Georgetown seems to hold the field as the terminus of a North to South Transcontinental South American line, because nowhere is the watershed between the Amazon and the northern coast of South America so low. The watershed on the Rupununi savannah is only 400 feet above sea level. Georgetown is also the best and safest harbour between the Orinoco and the Amazon, the Demerara entrance being actually as deep and a safer bar than the Orinoco, and west of the Rupununi watershed there is no outlet to the northern coast without passing through most mountainous and difficult country.

Its construction at the present time would probably start a combined effort on the part of the great and prosperous South American States to give the Continent through railway communication between the far South in the Argentine, over 40 degrees of latitude to Georgetown, and make the capital of the colony the metropolis of the Northern Coast of the Continent.

COST OF CONSTRUCTION.

Mr. Bland's Report.	}	Georgetown to Wismar including cost of ter-	
		minus,—at Georgetown	£ 300,000
		Wismar to Ireng month	1,000,000
			£1,300,000
		Less if taken only as far as Yupukari, 50 miles	
		at £3,500	175,000
			£1,125,000
		Allocation to improve facilities for whe	
		transport across savaunah	25,000
			£1,150,000
		<i>Carried forward</i> ...	£1,150,000

	<i>Brought forward</i> ...	£1,150,000
To this ought to be added for immigration and settling immigrants on Southern lands (at least)		50,000
For a very light 20in. Decauville feeder railway from left bank of Essequibo, opposite the Potaro mouth section of the main line to the upper navigable Mazaruni (see para. 3 above)... ..		50,000
		<hr/>
Making a grand total of say,		£1,250,000
		<hr/>

TRAFFIC FOR THE FRONTIER RAILWAY.

Besides the timber prospects alluded to above the despatch refers, amongst other sources, of revenue to the great impetus which would be given to mining both in districts now being exploited and in others abandoned through cost of transit or never hitherto opened up. With regard to still other sources it says:—

This line would connect Georgetown with the wide stretching savannahs of the southern portion of the colony and the Brazilian State of Amazonas.

It would at once make the savannahs valuable ranching country and open their produce to the great cattle markets of the world. At present the city of Manaos only offers a limited and uncertain demand and a heavy duty shuts out colonial cattle from even that market. The cattle traffic alone should if properly developed, ultimately provide sufficient revenue to defray charges for interest and working expenses.

Subsidiary industries that should grow up in the south are ostrich farming, horse raising, tobacco, cotton, cocoa, coffee, rice and other cultivation. Rubber, Brazil nuts, and other produce of Brazilian territory within 150 miles of Boa Vista, may be expected to be attracted to the northern railway route, and that portion of Amazonas would probably draw all its supplies from Georgetown.

THE FUTURE OF BALATA.

More than half of the total production of balata in the colony comes from the Rupununi district. If such transport is provided, as would be the case if this proposed southern line is built, in lieu of the industry ceasing the annual export would probably increase. I do not look upon the forest balata industry as a continuously permanent one but the present trees of tappable age are not likely to be exhausted under ten years from completion of the line and young trees will later take their place.

MR. E. M. BLAND'S REPORT, 5TH JANV., 1914.

The Report opens with a sketch of the itinerary undertaken by the Governor and party from Georgetown up Demerara River to Wismar

thence via Essequibo and Rupununi and across the savannah to the Ireng River, then by Siparuni and Burro-burro Rivers back to the Essequibo and up to Kurupukari Fall on that River thence via Konawaruk and Tumatumari down Potaro River and back to Georgetown. Altogether 1100 miles were covered 875 by boat 225 on land in 68 days. He then reviews the various surveys and projects which have already been sketched in this paper, stating objections to the Bartica route for a trunk railway, and goes on to describe the topography of the route :—

RIVERS AND WATERWAYS.

British Guiana is peculiar in that it is a beautifully watered country and is traversed by many large rivers and streams, which unfortunately are navigable only in parts, these stretches being separated by numerous rapids and falls which are not only a hindrance and cause innumerable delays, but are in many cases dangerous and in others impossible to get through. It is the occurrence of these rapids, formed by bars of rocks, which causes the rivers to be held back forming large still pools above until the next rapid is reached, and it is along these reaches that navigation is comparatively easy in small craft during ordinary water. When the rains are on and the rivers begin to rise, these pools extend and in several cases where during the dry season a "portage" would have to be made, a rapid can be safely passed through in the high water.

The bigger rivers such as the Essequibo, Demerara, Berbice and Corentyne are navigable for large boats from the coast for varying distances. On the Essequibo ships drawing 14 feet can proceed to Bartica, some 56 miles from Georgetown. On the Demerara ships with a draught of 16 feet can proceed to Wismar—a distance of 65 miles. While on the Berbice, which is hindered by a shallow bar at the mouth boats with a draught of only 8 feet can cross it and proceed for a distance of 88 miles to Paradise.*

The Corentyne, which is better in this respect, admits boats drawing 16 feet and is navigable to a point some 10 miles or so below Orealla.

From all these steamer termini transshipment has to be made into small boats or launches; consequently the cost of transport is prohibitive and the settlement of the interior of the country has not been developed in the slightest way.

THE ROUTE OF THE RAILWAY.

It will open up large forest areas and render much more accessible the great country lying to the south of the junction of the Rupununi and Essequibo rivers. In connection with this it may be found practicable

*Note :—Mr. Bland is wrongfully informed. The Berbice River is the finest waterway in the colony. The Direct Line Steamer "Cheniston" drawing 16ft. entered the Berbice River without difficulty on one of her last voyages to the colony, and since then large timber ships have been in the port. We have personally taken soundings at Cumaka, 88 miles from the mouth, and found 39ft. of water. The river is navigable for ships drawing 16ft. to Eboroba ($5^{\circ} 18' S. Lat.$) at which point greenheart timber has been loaded into seagoing bottoms. For lighter craft it is navigable to the 5th parallel of latitude, about 180 miles from the mouth.—[Sc. Ed.]

to bring produce up the Rupununi river from its mouth to Annai where the Railway will be practically alongside the bank as this stretch of water is navigable for launches and no rapids are encountered.

The northern terminus can be situated at either Georgetown or near Wismar, but I am inclined to favour the latter place to begin with.

Terminal facilities would be costly at Georgetown and land for the right of way would have to be expropriated for a greater part of the distance. In all it is estimated that the extra cost in bringing the line to Georgetown will not fall short of £300,000.

If the proposed northern terminus of the line is placed between Christianburg and Wismar on the left bank of the Demerara river, good ground can be had here for terminal facilities with a splendid waterfront along which wharves can be constructed while at the back is a sand ridge eminently suitable for quarters and offices for the staff.

From this point the line would strike inland and climb up the watershed between the Demerara and Essequibo rivers (which nowhere about here reaches a very high elevation) keeping a general southerly direction, the Arisarú mountains, which are only a low range of hills, would be crossed at a point some 3 to 5 miles to the east of the Essequibo river where a break in them occurs. Continuing along at a distance of 3 miles or more from the Essequibo the Mariwa creek should be crossed as close as possible to its mouth in order that the line may be taken to the vicinity of the Potaro mouth so that it can cater for the traffic of the Conawaruk and Potaro districts. In connection with this it would be of great benefit if the line could be taken down to the bank of the Essequibo river to enable freight and passengers to be loaded directly into boats and train. It would also have this advantage, that if a line is ever built up the Potaro river to Kaieteur the crossing of the Essequibo could be made just above the confluence, where rock foundations would be obtained, and on up the right bank of the former river. Owing, however, to the short time at our disposal the question as to whether this is possible could not be definitely decided and it is a matter for the survey party to go into. I have, however, shown the line going down to the river's edge and the alternative route in a dotted line, the latter involving a branch some 12 miles in length. This branch should be avoided if possible even at the expense of slightly lengthening the main line. A short branch is expensive to work; it means the upkeep of staff necessary for two stations, the stabling at the junction of an engine and passenger stock to work the branch, which is never fully employed and is comparatively speaking out of control, while the benefits of having an important station

(as this will prove to be) on the main line are very great and in view of future extension to the west it should be done if possible.

A rough approximation of the two gives the length of the thick line going via the Essequibo river as 55, while the dotted line, including the branch, is $57\frac{1}{2}$ miles. The saving on working expenses makes the former project the more desirable even if the latter was shorter. Against this, however, it must be recognised that the dotted line would open up a greater area of forest land and this point would have to be duly considered on completion of the survey.

From here the line continues to skirt the right bank of the Essequibo river passing to the east of the small range of hills just above the mouth of the Akaiwana creek. From this point the line would run due south to the Kurupukari rapids where the Essequibo would be crossed by a steel bridge on concrete piers. Taking a bend to the west it would then follow the Burro-Buro river keeping however well back to avoid crossing any large streams until Annai is reached and the first savannah entered. Continuing almost due west and crossing the Mora creek close to its confluence with the Rupununi, the line would then proceed to the Ireng river, terminating on some high ground a few miles above its mouth or junction with the Takutu, from which point it is navigable for a large part of the year to Manaos and the Amazon.

LENGTH—GRADES AND CURVES.

The total length of the line to be constructed after making allowance for development due to curvature, etc., would be some 280 miles, and I am of opinion that one per cent. grades, compensated, with 6° curves (955' Rad). can be obtained throughout its entire length.

In no part will what is known as difficult country be encountered and there should be extremely little rock work, while by keeping near the top of the different watersheds the bridging will be small. It must also be remembered that in no single instance are the watersheds high. The forests to be gone through though containing plenty of good timber, offer no difficulty as regards clearing while good water should be obtainable everywhere. The only work of any importance throughout the line would be the construction of the bridge across the Essequibo river and this is fully dealt with elsewhere in the detailed notes under "Bridging."

LABOUR CONSIDERATIONS.

In order that the line may be completed with the greatest possible speed and open for public traffic, and quick construction is essential for economy, a large labour force will be necessary which will number from

10,000 to 15,000 men. Due to the local conditions of the labour market most of these will have to be brought into the country from oversea, and Chinese or East Indian labour might be imported if this could be done economically. The Panama Canal is now nearing completion and a large supply of West Indian labour will be available from there.

No doubt a fair number of labourers will be obtained locally and in all probability Indians from the interior could be persuaded to work. I am informed by Mr. Melville, the district Commissioner, Rupununi, that there should be no difficulty in getting hold of 1,000 to 1,500 of these people who could be employed in clearing the forest (which I understand is work they readily take to), cutting sleepers, and work of this nature. If some Government official who thoroughly understands the Indian could be detailed to look after and explain things to them, there is no doubt the experiment would prove a success and excellent work would result. Wherever possible small contracts should be let and the piece-work system adopted, more especially on earth-work, clearing, timber cutting, and work of this nature. For instance, 12 men might be given a mile of light earth-work to complete for which they would be paid so much a cubic yard, the price varying with the hardness of the soil to be excavated. Clearing should be paid for by the acre, piles and large timbers at so much a foot and sleepers in the same way.

These sums should be based on the ordinary wage so that the average man can always make his day's pay while the one who chooses to work harder will gain more. Day labour must be avoided where possible as it is anything but satisfactory, and the tendency is to slack. Plate-laying, ballasting, bridging and similar work will, however, have to be carried out on this principle and it is here that good supervision is needed. Experienced foremen must be brought into the country who may be given a bonus on account of good work or else paid an annual increment. The same holds good as regards the senior staff and the greatest care must be taken in their selection.

COST OF RAILWAY.

The estimate for building this line under the conditions laid down in the detail notes and carried to completion by the Government itself should not cost more than £3,500 per mile or a total of £980,000 for the whole work. This sum includes the cost of the Essequibo bridge which is estimated at £30,000. It is difficult to give even approximate figures of how this sum is made up without a definite survey, but the following estimate in detail will show how this cost is arrived at. It is based on figures obtained from lines constructed elsewhere under similar conditions and should prove fairly correct. They are of course liable to correction

on completion of the survey, but the discrepancies should not prove great and I feel confident the total need not be exceeded. Account has been taken of the cost of labour, supervision, stores, etc., and the following result arrived at :—

Item.	Cost per Mile.
Survey	£ 30
Earthworks and Clearing	525*
Bridges and Culverts	600
Permanent Way and Ballast	1,200
Stations and Quarters	200
Station Machinery and Workshops	100
Rolling Stock	500
Telegraphs	40
Engineering and Administration	270
Contingencies	35
	£ 3,500
Estimated length of line	280 miles
Total cost	£980,000

If the cost of labour* be taken at three shillings per day instead of two shillings which may have to be allowed should labour be specially imported, the above figures would be increased by quite £500 per mile bringing the total cost up to £1,120,000.

Taking the capital expenditure of the line at £1,000,000 and allowing for interest and sinking fund at 5 per cent. per annum, there is a sum of £50,000 to be met yearly. The working expenses on a line such as this should be kept down to an absolute minimum to begin with, and will not amount to more than £200 per mile per annum, or a total of, say, £50,000 for the year.

*NOTE :—COST OF LABOUR.—The Secretary of State raises this question in his despatch. The following notes are based on accurate information.

1. From Sugar Estates' Books, Berbice (Indentured labour.—
Trench digging costs 15 cents p. sq. rd.
2. From Estates not employing indentured labour—
Day's work with crinelle and mattock, 275 cub. ft.
Day's pay (varying according to conditions), 40 to 48 cents.
3. From Railway Contracting firm in the United Kingdom.
Day's work of navvy in medium clay (selected as comparable to average upper soils in the colony), 270 cub. ft.
Average price: Five-pence p. cub. yd.
From (1) the price works out, for a day's work of 10 cub. yds., at 36 cents.
From (2) at average 44 cents.
From (3) at average 100 cents.

This comparison makes it probable that even an attractive scale of pay will not put cost of labour above that of similar work at home. The rates for bush clearing are correspondingly moderate.—[S.C. ED.]

The estimated revenue is arrived at as follows:—

Allowing that 10,000 people have settled alongside the railway and are engaged in developing the country through which it runs and that another 10,000 travel up and down the line, we can take the number of passenger journeys in one year as being 30,000 and that the average journey is 140 miles, the passenger fares being 3d. per mile first and 1d. per mile third class, we can put down the passenger receipts at	£17,500
If at the same time there are 50,000 cattle on the savannahs the natural increase from this number will amount to 10,000 head and these should be available for shipment. Taking the freight at 30 shillings each to transport these down country, the revenue from this item will bring in	15,000
The timber industry should be well established along the railway by that time and even putting the output as low as 200,000 cubic feet which will cost one shilling a foot for transport we get ...	10,000
The implements, machinery, supplies, etc., sufficient to feed these people and enable them to develop the country and also carry on the industries already established will amount to quite 3,000 tons which at an average of £2 per ton brings in	7,000
And miscellaneous items such as telegraphs, parcels, etc., can safely be counted on to bring in	500
	<hr/>
	£50,000
	<hr/>

These figures are purposely kept as low as possible and should easily be realised while the estimated working expenses should suffice for handling this amount of traffic. Thus at the end of five years a loss of £60,000 would have to be faced which would be gradually reduced to nothing at the end of ten. This estimate does not include the possible receipts from passengers, cattle, etc., from and to the Brazilian territory adjacent to the line.

AGRICULTURAL POSSIBILITIES.

The wealth of British Guiana lies in its forests and soil as even a casual inspection of the interior will show. The forests are very fine containing a wealth of hardwood trees which can hardly be surpassed in their qualities. At present only the forest bordering the navigable portions of the larger rivers and the smaller tributary streams is being worked, which is a very small proportion of the total area. The Balata industry has made rapid strides during the last few years and more and more areas are being constantly opened up, but necessarily these are getting farther away and the cost of transport enters very largely into the sum for which it can be sold at a profit, until the economic distance is reached where it will not pay to go in any further.

Again, in the extreme southern part of the colony there exist what are termed savannahs which are really grass or prairie land interspersed with

a few trees along the river banks and pools. This land is most suitable for cattle raising, the grass being of a particularly sweet nature on which cattle thrive.

Cotton, maize and tobacco might be grown, and it is possible the land is suitable for rearing ostriches, which industry is to-day proving most profitable in other parts of the world. In this connection it would be of great benefit if the Government were to establish a farm at some suitable point on the savannahs where experiments could be carried out with consequent benefit to all concerned.

The wealth of the soil of the interior has to be seen to be appreciated but nothing can be done without a population to work it and under the present conditions it is practically impossible to transport them to the interior and even if they were got there they would have no means of getting their agricultural produce to the market.

It would not be advisable to count on obtaining any revenue on through traffic with Brazil at present. Any line constructed by British Guiana must depend upon British Guiana for its development and no account taken of any traffic from the interior offering itself.

There is this point to be remembered, however, that once the Panama Canal is opened the shortest and quickest route to the West Coast of North and South America from the interior of Brazil would lie through British Guiana and every endeavour should be made to obtain this traffic.

THE HINTERLAND RAILWAY COMMISSION'S REPORT.

The following is the text of the report of the Committee appointed to discuss His Excellency the Governor's despatch to the Secretary of State with respect to a railway to the hinterland.

The Committee appointed to discuss Your Excellency's Despatch No. 5 of the 5th January, 1914, to the Secretary of State for the Colonies with respect to a railway into the hinterland of this colony, met on Monday, the 20th April, 1914, in private. The members present were:—

The Hons. C. Clementi, M.A., Government Secretary; J. J. Nunan, K.C., Attorney General; J. Hampden King, Immigration Agent General; D. M. Hutson, K.C., and J. B. Laing, members of the Executive Council; the Hons. E. C. Buck, A.M.I.C.E., Colonial Civil Engineer, J. P. Santos; F. Dias, A. P. Sherlock and C. F. Wieting, members of the Legislature; Messrs. C. W. Prest and J. S. McArthur, Mayor of Georgetown, Financial Representatives; J. A. Abbensetts, Mayor of New Amsterdam, J. Cunningham, representing the Royal Agricultural and Commercial Society; J. Duke Smith, representing the Chamber of Commerce, J. Gillespie, representing the Planters' Association, and A. F. White representing the Balata Industry.

The Honourable A. B. Brown, member of the Court of Policy, was asked to serve on the Committee. He regretted that owing to pressure of business, he was unable to do so. The Honourable R. G. Duncan, member of the Executive Council and of the Court of Policy, the Honourable Wm. Whyte, and J. Downer, members of the Court of Policy, Dr. J. M. Rohlehr and Mr. S. S. Wreford, Financial Representatives, were unavoidably absent. Mr. G. R. Russell Garnett and Mr. R. E. Brassington, (Financial Representatives) being absent from the colony were unable to attend. Mr. Mewburn Garnett, who was appointed on the Committee to represent the gold and diamond industries, left the colony before the meeting of the Committee. Mr. C. E. Rice was appointed in Mr. Garnett's place but owing to his absence in the interior, was unable to be present on the 20th April.

The Honourable J. B. Laing was proposed as chairman by the Honourable the Government Secretary, and was unanimously elected. After considerable discussion it was proposed, and unanimously carried, that a Sub-Committee be formed to go into the whole question and formulate resolutions for discussion at the Committee's next meeting.

The following gentlemen were appointed members of the Sub-Committee:—

The Hons. J. B. Laing, Chairman; C. Clementi, J. J. Nunan, J. Hampden King, E. C. Buck, and A. P. Sherlock, Messrs. C. W. Prest, J. S. McArthur, and J. Duke Smith.

The Sub-Committee held two meetings and drafted ten resolutions which were submitted at the meeting of the Committee held on Monday, the 4th May, 1914, when all the members (including Mr. Duncan, Mr. Downer, Dr. Rohlehr, Mr. Wreford and Mr. Rice, who were absent from the first meeting of the Committee) were present, except Mr. C. F. Wieting who had left the colony in the interval.

Considerable discussion in public took place on the resolutions and several amendments thereto were passed.

The resolutions as amended, and unanimously adopted, are as follows:—

1. This Committee strongly supports the proposal to construct a Hinterland Railway if combined with a colonization and development scheme; and recommends:—

2. That work on the railway shall be open to all labourers free in the colony.

3. That immigrants under contract be imported yearly for the first five years to replace the labourers withdrawn from the coastal and river districts for work on the Railway and for taking up land under the colonization scheme.

4. That the railway shall be of metre gauge so as to allow of trans-continental railway communication without change of engine or carriage.

5. That the question of whether the railway should be built by the Government or by contractors be left to His Majesty's Government for final decision.

6. That the Secretary of State be asked to sanction a loan aggregating £2,000,000—at lowest possible rate of interest, of which loan £1,400,000 be allocated for railway construction, deficit on working expenses for eight years, colonization and development of the hinterland, and £600,000 for development of the coast and river districts and meeting expenses in connection with the withdrawal of labour.

7. That the starting point of the railway shall be Georgetown, and not Wismar or some other place up the Demerara River.

8. That the question of the Constitution be not dealt with by this Committee, there being at present no information before us as to whether or no the Secretary of State will raise this point as one of the conditions for allowing the loan asked for.

9. That the portion of the loan allocated for coastlands and river districts development shall be repaid as follows :—

First three years nothing, after three years the interest on full amount plus the deferred interest for three years plus sinking fund for forty-seven years on total of loan and accumulation of interest.

That the amount set aside for railway construction, colonization, development of the hinterland and deficit for working expenses during first eight years be paid as follows :—

First eight years nothing will be paid—after 8 years half interest on the £1,400,000, after sixteen years full interest on the whole amount plus interest for first eight years deferred, plus deferred half interest on second eight years, plus sinking fund on entire amount for thirty-four years—or on such other terms as the Secretary of State may see fit to allow taking into consideration the financial position of the colony.

10. The loan to extend over a period of fifty years.

The Committee were unanimously in favour of the Hinterland Railway being eventually linked up with the railway in Brazil, and a strong point was made that, if there was to be a railway at all, the industries of the coast and river districts must be safeguarded as respects labour withdrawn from those districts for the railway and for colonization of the hinterland.

The Committee further specially emphasise the fact that there must be colonization and development schemes for the coast and river districts, side by side with any scheme for a railway to, and development of, the hinterland of the colony.

The Committee ask that a copy of this report be forwarded to the Secretary of State for the Colonies by the first opportunity.

 MINORITY REPORT.

We, the undersigned members of the Committee appointed to discuss Your Excellency's Despatch No. 5 of the 5th January, 1914, have withheld our signatures from the majority report, because in our opinion the construction of a hinterland railway should not be made conditional on a colonization and development scheme for the coast and river districts.

We agree with the majority report that the industries on the coast and river districts should be safeguarded so far as possible with respect to labour withdrawn from those districts during the construction of any railway.

We strongly hold the view that, in the event of the Secretary of State declining to make a loan of the amount set down for the development of the coast and river districts, His Majesty's Government should nevertheless be asked to sanction a loan on the terms suggested in Your Excellency's despatch with which we entirely concur.

Respectfully submitted,

CECIL E. RICE,
A. F. WHITE.

 MEMORANDUM BY MR. NUNAN FOR THE COMMITTEE AND
SUB-COMMITTEE ON RAILWAY MATTERS.

The whole question turns upon what proposal to contribute and repay we are able to make to the Secretary of State. He is unlikely to consider a mere grant and we must advance a basis of discussion and negotiation.

Can this Committee help the Governor in this matter? His despatch of 5th January implies that the Colony is to assist in the enterprise, paras. 11 (c), 12 (b) and 30. I have been asked to circulate the proposals made in my speech to the Committee at its opening meeting, 20th April, and now do so.

My proposal is that we should put Railway loan of 1½ M. Stg. plus deferred interest, interest and Sinking Fund on a separate basis from a Development loan of ¾ M. Stg. plus deferred interest, interest and Sinking Fund and ask the Secretary of State to help us as regards both.

(1.) I wish to emphasize that we have only Mr. Bland's figures to go on and are not a body of experts ourselves. Whatever doubts we may have as regards under or over estimates of costs or profits in details there is nothing to be gained by dwelling on them at the moment. When a detailed survey is made the estimates can be re-adjusted. At present we should be only wasting time in trying to criticise the only expert basis of discussion we have.

(2.) If a through route is successfully constructed harbour construction will be easily managed. Capital will flow in for a loan to improve a harbour having a trunk-line terminus. We can postpone consideration of this. Harbour improvement will not be urgent without a through route. Three years hence is time enough.

(3.) Sea Defences we should deal with either by a loan on some separate basis or out of our developing resources. Some contribution (say £50,000) might be made from the Development loan.

(4.) Deficit on Working Expenses, *i.e.*, over and above capital charges. Mr. Bland's figures are a deficit of £10,000 after the first five years. I think he has under-estimated returns if the route is to be a through route. If there is a deficit it can be provided for out of current revenue but I do not think there will be one.*

The Scheme is based on fifty years amortization and repayment as required by the Colonial Loans Act, 1899.†

(1) *Re* RAILWAY LOAN (1½ MILLIONS STG.).

We ask the Secretary of State to carry us entirely for the first six years, as to half for the ensuing six years, finding the deferred interest as it becomes due and making no provision for Sinking Fund for twelve years. After twelve years we pay the whole interest plus interest on the funded deferred interest, plus Sinking Fund on the total amount spread over 38 years. Labour for the Railway should be looked for to West Indian and local negroes, the most suitable for that class of work. No restriction should be attempted in the movement of labour.

(2) *Re* DEVELOPMENT LOAN (¾ MILLION STG.).

We ask the Secretary of State to carry us for three years and we then undertake to repay loan and deferred interest in 47 years. This might be altered to four or even five but three should do.

Four thousand families or possible families, *i.e.*, groups of two consisting of not less than one adult person of each sex (East Indians or Chinese) married or of marriageable age indentured for three years on the coast properties should be brought in at Government expense. At £30 per "family" this would cost £120,000 a year for five years.

This is only a suggestion, not a hard and fast scheme. Both number and period of indenture may be varied.

It would replace the labour attracted to the railway and supplement the present indenture. The 4,000 families brought in during the fifth year would have indentures running to end of seventh year. The sugar and other plantations and industrial interests on the sea coastlands would be substantially protected from loss during the years of construction, extension and the excitement of any gold discoveries. The coastlands would be developed by the settlement of the imported labour when free.

* NOTE.—Mr. Prest has called my attention to the fact that Mr. Bland's estimate overlooks the first five years. (The deficit on the first five years should be charged to capital required for the railway.)

† By this Act interest must be at such rate as will save the Fund from actual loss and must not be less than 2½%. The price of our money must be fixed by English market conditions. Consols now stand at 75 to 76 and many Colonial Loans are being issued at 99 for 4%. The interest mentioned is a rough approximation based upon what our money would cost us. The loan must be satisfactorily secured by the local legislature.

£150,000 should be set aside to provide suitable lands for settlement at the end of the period of indenture. Of this £50,000 might be spent on any urgent sea defences necessary for the purpose of empoldering the lands required for development. This empoldering scheme would benefit the coast population in general.

It should be noted that under this scheme there would be 40,000 adults, mostly married couples not reckoning children in the fifth year and that each person would be paying directly or indirectly nine or ten dollars to the public revenue or \$360,000 per annum or more than double the amount of the annual interest and Sinking Fund on this head. Present colony revenue is about \$9 per head, paid chiefly in indirect taxation. With prosperity, consumption of taxable commodities would increase, also taxable capacity.

At the beginning of the fourth year we should have 16,000 families (4,000 time-served) paying nearly \$300,000 to the revenue or more than enough to pay the interest, deferred interest and Sinking Fund on this Development Loan.

PRIVATE RAILWAY SCHEME.

There is another question to consider and that is the possible refusal of the Secretary of State to consider a Government Railway on the ground that we cannot afford the expense and the risk.

In that case we should ask the Secretary of State to help us to secure the construction of a leased Government railway or of a private railway by a reliable firm of contractors on the most advantageous terms possible to the Colony based upon land grants and a limited number of years' subsidy. The terms asked by Colonel Link's supporters were 10 years at $3\frac{1}{2}$ per cent. These terms are hopeless to expect now. In Brazil the railways are built on a 25 years' subsidy of 5 per cent. But we could do better than that on a British Imperial guarantee. I think 15 to 20 years at 4 per cent. would secure what we require. On Mr. Bland's figures of $1\frac{1}{4}$ millions, interest (spread by amortization over fifty years) would amount to roughly £40,000 a year, but I have not worked out this last figure by tables.

FIGURES.

It should be noted that the figures set out below, which make no pretence to official authority or to actuarial skill, would be somewhat reduced in a calculation allowing for the fact that the Development loan would not be fully called up until the beginning of the fifth year nor the Railway loan until the beginning of the fourth. On the other hand the annual interest on deferred interest as it accrues, *i.e.*, compound interest is not taken into account so that I have made a rough balance. The calculation can also be worked out in other ways, *e.g.*, on the basis of deferred payments and at the expiry of the free period payment of a Combined Sinking Fund comprising all interest charges. The main point

is to give the people of the colony some reasonably accurate idea of what their ultimate liability will be. The figures have been checked by Mr John Bollers to whom I take this opportunity of expressing my sincere thanks.

DEVELOPMENT.

<i>First Three Years.</i>	<i>After Three Years.</i>	<i>After Six Years.</i>	<i>After Twelve Years.</i>
Nothing.	(a) £23,437 being interest at $3\frac{1}{8}$ per cent. on $\frac{3}{4}$ M. Stg.	Do.	Do.
	(b) Plus interest on £70,311 being three years deferred interest, viz, £2,197.	Do.	Do.
	(c) Plus Sinking Fund for 47 years on $3\frac{1}{2}\%$ basis on total of loan and accumulations on interest—£7,111.	Do.	Do.
	Total £32,745 for interest and Sinking Fund.		

RAILWAY.

Nothing.	Nothing.	Half interest on loan of $1\frac{1}{4}$ M. Stg. at $3\frac{1}{8}\%$ £19,531.	(a) Full interest on $1\frac{1}{4}$ M loan £39,062.
			(b) Plus interest on £234,372 amount of first six years deferred interest, viz., £7,324.
			(c) Plus interest on 2nd six years defer'd £117,186 viz., £3,662.
			(d) Total on foot of Sinking Fund for 38 years at $3\frac{1}{2}\%$, £27,281.
			Total £77,329.

NOTE.—Sinking Fund is calculated on the assumption that we can get $3\frac{1}{2}\%$ per cent. for our money. We could probably do better. We might also get our loans at a little less than $3\frac{1}{8}\%$.

NOTE BY MR. NUNAN, AFTER FIRST MEETING OF SUB-COMMITTEE.

The Immigration Agent General thinks £35 per "family" of two would be nearer the amount of cost. (In the case of Chinese we shall have the advantage of the Panama Canal after the current year). He also thinks that there may be difficulty in carrying on two systems of indenture with different periods, viz., five years and back passage for the old system, three without back passage but with land grant for the supplementary and temporary system. He thinks a scheme based upon the actual indent of the proprietors offers more advantages, for instance an agreed indent and a free importation of twice as many as are indented for on the old system.

Hon. A. P. Sherlock further thinks 4,000 "families" or 8,000 adults a year might be more than the estates could handle, mentioning hospital and housing requirements. Both suggest 5,000 adults a year, the sexes being about equal in numbers.

These are details which only the Immigration Department and the planters can work out. The main point is the sum to be asked for and the method of application. This must be a fixed sum for the specific purpose of coast labour and colonization, to avoid subsequent complaints of unfair application and to enable the situation to be faced as a whole. The object is to provide indentured labour for the coastlands to replace any special drawing away of labour entailed by railway and development in the far interior. The further aim is to secure a suitable population for the coastlands which ought to be prepared for colonists by irrigation and drainage under Government schemes.

LATER.

The Scheme actually recommended by the Sub-Committee adopts the principle and the periods set out above but allocates £150,000 out of the Development Loan of $\frac{3}{4}$ million stg. to the Railway Loan for settlement on the lands in the interior, thereby supplementing His Excellency's proposal of £50,000 for those lands. £600,000 remains earmarked for the Coast labour and colonization. The figures given above will have to be re-adjusted accordingly making payments on the Coast development loan begin at £26,523 in the fourth year and increasing to £21,875, the Railway payments to begin after the sixth year. The later figures after the twelfth year will have to be correspondingly adjusted. The total for both loans will not be much different from our present estimate. Any deficit on working expenses is not contemplated after fifth year from opening of railway. As against expenditure we shall be able to reckon increased population on coast and interior savannah, general development and railway connection with Brazil.

CALCULATIONS ON BASIS OF £600,000 FOR DEVELOPMENT.

<i>First Three Years.</i>	<i>After Three Years.</i>	<i>After Six Years.</i>	<i>After Twelve Years.</i>
Nothing.	(a) £18,750 being interest at $3\frac{1}{8}\%$ on £600,000.	Do.	Do.
	(b) Plus interest on £56,250 being three years deferred interest, viz., £1,757.	Do.	Do.
	(c) Plus Sinking Fund for 47 years on total of loan and accumulation on interest—£5,201.	Do.	Do.
	Total £25,708 for interest and Sinking Fund.		
If after 4 years then—			
	(a) £18,750.		
	(b) £ 2,343 being interest on £75,000 4 years deferred interest.		
	(c) £ 5,430 Sinking Fund 46 years.		
	Total	£26,523.	

RAILWAY, £1,400,000 (INCLUDING £150,000 ADDITIONAL FOR DEVELOPMENT.

Nothing.	Nothing.	Half interest on loan of £1,400,000 at $3\frac{1}{8}\%$ —£21,875.	(a) Full interest on loan—£43,750.
			(b) Plus interest on £262,500 amount of first six years deferred interest, viz., £8,203.
			(c) Plus interest on 2nd six years deferred, viz., £4,101.
			(d) Total on foot of Sinking Fund, £23,286 S. F. 38 years.
			Total £79,340.

THE PRESENT POSITION OF RAILWAY PROJECT.

Since the above materials were put together a despatch from the Secretary of State has been received which is to some extent discouraging in its criticism of the proposals made by His Excellency the Governor in his despatch on the Hinterland Railway.

As foreshadowed by the Chairman of the Railway Committee at the first meeting of that body want of knowledge of what the views of the Secretary of State would be has, to some extent, rendered the previous work of the Committee useless.

The Secretary of State roundly condemns the proposition of an advance of capital by the Imperial Government without a definite term for repayment as one which he cannot place before Parliament. He considers that more definite data as to probable traffic should be furnished and thinks it "not impossible to propound a scheme under which that development would pay for itself."

He further lays it down that control of the colony's finances by the Imperial Government would be an absolutely necessary condition of any loan.

This latter question is one which in the absence of knowledge of the Secretary of State's views the Committee had not reported on. The present Constitution of the colony gives financial control to the Combined Court to the extent of modifying the estimates presented by the Executive. The Combined Court consists of Officials and Electives, the latter being in the majority.

A change of Constitution would be required to meet the views of the Imperial Government. So far as can be seen at present no considerable opposition is likely to be offered to the necessary change.

A more difficult question is perhaps the framing of a definite estimate of traffic returns, on which a scheme of repayment might be based. The rate of development would of course determine this, and that rate depends upon

1. The resources available in gold, timber, balata and gums, the grazing possibilities of the savannahs, for cattle, horses, sheep and ostriches, the agricultural possibilities of the savannahs and forest lands.
2. The available population native and imported.
3. The calibre and enthusiasm of the leading men of the Colony.
4. Dependent upon (3) the interest and confidence created in financial centres, from which capital for new adventures may be drawn

In regard to (1) a good deal is known and stated above. It has been too easily assumed that the interior of Guiana is an unknown territory. There are large areas of it unknown, but there are also quite sufficiently large areas about which almost everything vital to the issues is known.

Taking the first 70 miles of railway beyond the unobstructed waterways, the timber, hitherto uncut and rendered accessible for the first time, will be found to be similar—except that Greenheart may be substituted for Mora and Kakeralli—to that in areas of which sectional surveys have been made by the Forestry Officer (*vide*, Forest of British Guiana. Series I. August, 1912, Append Form No. 7, 8, 9, 10, 11.) The area within easy reach of this section of railway embraces, say, 700 square miles of timber rendered accessible for the first time.

Taking only twenty-six of the timbers counted and tabulated by the Forestry Officer with the character of which I am familiar and dividing them according to their uses into five classes the supply of timber squaring over six inches may be stated for this area as

1. Woods (5) of "Mahogany" type	...	5,436	logs	p.	sq.	mile.
2. Woods (4) of Lance Wood type	...	10,501	"	"	"	"
3. Fancy Woods (4)	...	4,185	"	"	"	"
4. Soft Woods (3) (Simarupa type)	...	2,346	"	"	"	"
5. Construction timbers (10)		20,000	"	"	"	"
		42,468				
Total	...	...		

of average girth 40 inches, and length, say, 30 feet. that is 900,000 cub. ft. of timber per square mile. If one-tenth of the timber in this 70 square miles is cut in 10 years freight at six cents per cub. ft. on its carriage to a port of shipment would yield \$378,000, plus freight of supplies carried to the timber grants. Put the possible timber development at \$30,000 freight per annum for this section of the railway.

It may be possible for the Committee to work out figures for other sections and other industries on a conservative basis of traffic and in a detailed form which will satisfy the Colonial Office that at least we know our business at this end, an assurance which will go far to further the purpose for which the Committee was appointed. The figures for balata for example should not be difficult to ascertain, and an allowance for expansion of 50 per cent. would certainly not be excessive. The Gold Industry's demands on rail facilities might be approximately ascertained within a small percentage of error. The live stock figures have no present basis of calculation, but a nominal annual sum might be set against that prospect.

The extent of the rubber exploitation of the Rio Negro and its tributaries is not easy to ascertain, but it is a very large industry and quantities of supplies are used which would certainly be more economically carried to the working base *via* a border railway. There is indeed a probability that this wild rubber area would be put in a position to compete with plantation rubber more successfully than it has ever done before. It is well known that the very highest class of Para rubber is

found in that district, the rubber of the lower flooded areas being inferior in quality. A moderate sum may be added to the freight account tentatively on this score.

It will thus be seen that the shibboleth, as it has become, of an unknown hinterland is becoming anachronistic, if it has not already become so. The Hinterland Railway Committee have the opportunity of putting together cold figures which may freeze stray facts together into a form so substantial that the most obtuse will scarcely be able to deny the real existence of a business proposition in railway freights to and from the interior, which depends for its development solely on the foresight, capacity, energy and business acumen of the commercial men of the colony.

RAILWAYS, TWELVE YEARS AFTER.

By JOSEPH J. NUNAN, LL.D., ATTORNEY GENERAL.

By his despatch of 5th January, 1914, to the Secretary of State for the Colonies, His Excellency Sir Walter Egerton has brought the idea of opening up the interior of British Guiana from the domain of theory to one of discussion of the practical details. For this the colony owes him a very great debt of gratitude which it has not been slow to acknowledge. By securing the services of Mr. Bland for a flying inspection of the route, by visiting the Rupununi Savannahs personally and by voicing in no uncertain tones his belief in the possibilities of the interior and in the feasibility of a trunk-line to Manaos, the capital of the Amazon Valley, he has done much to rout the pessimists and to determine the waverers. He has a firm belief in the future of British South America and in its vast resources. He agrees with those pioneers of the movement who have, for some years, been advocating that Georgetown should regard itself as destined to be a great South American port, the terminus of a railway which should not alone tap the Amazon Valley but should form the northern section of a line linking us in a short time with Uruguay, Chile and the Argentine.

The scheme of a trunk-line to Manaos was, so far as I can ascertain, first discussed as a practical proposal at my house in Kingston in September, 1907. I had left the colony for a short holiday early in July and had lent the house to the late Colonel Link who expected to be gone before my return. He was not able to conclude his business as early as he had expected, and on my arrival I invited him to stay until he was ready to leave for home. He was an elderly man in somewhat delicate health, but with a cultured and attractive personality. He eventually sailed three weeks later. My previous acquaintance with him had arisen from my having been engaged on behalf of the Crown in a successful defence (in association with the present Chief Justice, then Attorney General) to his action against the Government about a rubber lease. Subsequent to this period, however, I acted for him as counsel in the long and troublesome negotiations, here and in England, which led to the formation of the Consolidated Rubber and Balata Estates. If his plans had been carried out as conceived and at the time contemplated, this colony would probably have attracted a great deal of attention in 1909 among growers of rubber. As it was the colony met only the ebb tide of the rubber boom and endured indignities accordingly. He had prophesied the rubber development but his counsels fell upon deaf ears. Colonel Link returned to the colony in March, 1908. He informed me that he had interested many of his former friends and financial supporters in the scheme which we had discussed

with the aid of a map in the previous September. We had had no correspondence in the interval. I learned that he had formed and registered a Syndicate containing some well-known financial names, and that he was satisfied that capital could be found for construction on the basis of a ten years' guarantee of $3\frac{1}{2}$ per cent. plus a land grant in alternate blocks on the lines of that given to the Canadian Pacific. With the previous knowledge of the Government I drew up a scheme and wrote for him the application of 8th April, 1908, but had to withdraw soon after from professional connection with the scheme, as it was clear that Sir Frederic Hodgson would not consider it. Colonel Link gave up negotiation as hopeless and, against advice, published the correspondence in the Press, which transferred the matter to the political arena. As a Government officer, although with right of private practice, I could not deal with the matter further professionally. The nominal fee I received, I returned. Colonel Link's personality no doubt complicated the case and the fact that he had either been made bankrupt or had made a composition with his creditors during the troubles of the South African market, as to which he made no secret whatsoever, prejudiced his advocacy in a somewhat conservative but solvent community. I never quite learned the facts of his financial misfortunes but was assured, on what I regarded as very good authority, that they were not discreditable to him individually but were due to difficulties caused by the war. To the last he remained able to influence considerable sums of capital. His occupation, however, at this declining and least successful stage of his life, was that of company promoter. In that suspected capacity he deserved well of this colony for he advocated schemes that were perfectly sound and made no attempt to water his stock.

Colonel Link returned to the colony in November, 1911. I had severed my professional connection with him on the formation of the Consolidated in 1909 and never renewed it. Had I withdrawn earlier the combination would have collapsed and innocent negotiators would have suffered. In a small community it is difficult to secure differentiation of professional and personal responsibility, but I had no wish to repeat my experiences. He was still hopeful of his trunk railway. An English Syndicate had with his assistance been formed which had secured a valuable concession from the State of Amazonas to build the Brazilian end of the line from Manaos. A flying survey had been made to our frontier opposite Boa Vista by their engineer, Mr. Targett. The line followed by the engineer can be seen drawn on the map of the Amazon Valley, at the entrance to the Royal Agricultural & Commercial Society's Rooms. In consequence of Brazilian requirements as to gauge, his original scheme of a standard or 4 feet $8\frac{1}{2}$ inch gauge had been altered to the metre. Colonel Link had many other projects afoot but he died in January, 1912. The Syndicate for the Brazilian section melted into air, I never ascertained its exact composition. Messrs. Farquhar secured another concession later, but have relinquished it for political reasons.

To Colonel Link, without a doubt, must be ascribed the first effort to carry into effect any such project. I read with pleasure His Excellency's reference to this fact at his lecture in the Reading Rooms during the visit of Her Highness Princess Marie Louise of Schleswig-Holstein, and I am obliged to him for his remarks about my own long-standing identification with the railway ambitions of the colony. For a long time I had to stand almost alone like, Charlotte Corday, "a Republican before the Revolution," and the somewhat unregulated enthusiasm of many of the recent converts induces a smile when one recalls their unreasoning opposition at the outset.

As the scheme was one which some few of us thoroughly favoured, Mr. King, the Crown Solicitor, being an early and persistent advocate, we were not inclined to see it altogether abandoned. The first step was the formation of a Joint Railway Committee for the purpose of ventilating the subject. As President of the Royal Agricultural and Commercial Society, I took the initiative and the late George Garnett, C.M.G., was the first chairman. It consisted of delegates from the various representative bodies. To this Committee I reported in March, 1912, the information I had gained in London during a fortnight's visit as to the possibilities of the scheme of a railway receiving favour either in official or financial circles. With the prospects on both points, I was very well satisfied and the Committee was much interested. It said "*Macte virtute, puer,*" or words to that effect. "A member of the Joint Railway Committee" reviewed the whole position in an article in *Timahri* in July, 1912, which Mr. Harcourt told me he has read with interest. The Committee then decided to await the result of the investigations which, it was understood, His Excellency would make as to the possibilities, as soon as feasible after his arrival. It has never met since.

His Excellency has now on the advice of his Council submitted his proposal of a Government railway, to be built with Imperial assistance, aiming to link up eventually with Brazil, to the consideration of the most representative Committee which has ever sat in this colony. It was communicated to the Secretary of State in a despatch dated 5th January, 1914, which was locally published on 10th February. It has been somewhat misinterpreted, the more popular supposition being that it was a proposal to the Secretary of State to make the Colony a present of 1½ million sterling in return for its Constitution. On careful perusal it is clear that His Excellency intended to suggest a contribution by the Colony to its own development. The lines which this should take or the amount of the contribution is not indicated and the subject was evidently meant to be dealt with by later discussion.

The Committee comprises the unofficial members of the Combined Court, many members of the Executive Council, delegates from the Royal Agricultural and Commercial Society, Chamber of Commerce and Planters' Association and representatives of the Mining and Balata

industries. The whole future of the colony will depend upon the soundness and moderation of the advice given by this Committee. We all sincerely hope that it will not fail to rise to the height of its great opportunity. The problem is not only a financial one, it involves also the necessity of taking measures to secure to the coast industries their labour supply during the period of construction, and migration, at a rate not greatly exceeding the present, in view of the depreciated condition of the sugar market and of the fact that the sugar industry contributes some 75 per cent. both to our exports and to our general revenue. The withdrawal of nine or ten thousand free labourers for the railway would mean the collapse of the industry and the temporary ruin of the colony.

The question of the construction of a railway has been linked for the moment with the surrender of the treaty privilege of a popular majority in the financial body or Combined Court. To alter this an Imperial Act will be required. Opinion is very much divided as to the advisability and as to the necessity of this suggested surrender. The actual statutory requirements are those of the Colonial Loans Act, 1899, which require that the loan shall be satisfactorily secured by an Act of the local Legislature. There seems little doubt but that an expression of opinion from the Secretary of State, or a statement by him of the financial situation as laid down by the English Treasury would produce a satisfactory and virtually unanimous solution.

In the absence of any other definite proposals I submitted the following memorandum to the Committee and Sub-Committee. It has been adopted in substance and principle by the Sub-Committee. The view of the Committee and of the Colony remains to be seen.*

* NOTE.—It has since been adopted by the Committee as embodied in the Sub-Committee's Report. The principal alteration is the substitution of eight and sixteen years for the proposed six and twelve years' exemption and partial exemption. This would make the payments after eight years about £28,000 and after sixteen years about £84,000 for railways and savannah development.

SOME CONTROVERTED POINTS OF LOCAL LAW WITH RESPECT TO LEASES.

BY L. C. DALTON.

There exists in this colony some difference of opinion in legal minds on the subject of leases, especially with reference to what constitutes the proper execution thereof, and some useful purpose may be served by putting on record what to my mind is requisite in such cases, together with the reasons for my opinion. If I am correct there is no doubt that many of the long leases which have been executed in this colony (though it is not a form of tenure which at present can be said to be common) are of doubtful validity, though they have possibly received some element of official recognition from the fact that they have probably been executed notarially. In many cases it has been deemed sufficient to sign such leases before a notary, but in my opinion such execution is not in conformity with the requirements of the law. How it originated I have been unable to ascertain, but it may have some relation to the practice of executing mortgages notarially, which practice was, I am told, allowed in this colony a considerable number of years ago, until in the absence of any statutory sanction better opinions prevailed pointing to the necessity of judicial execution for their validity.

As regards leases at any rate, the present law and practice is most unsatisfactory and uncertain, and a useful purpose alone will have been served if this paper could but result, by giving cause for search and discussion, in putting both the law and the practice on the subject of leases on a definite and ascertainable basis.

For the benefit of the many lay readers of "Timelri," perhaps I may be allowed to say here that to ascertain the meaning of the word "lease" reference may be had to Webster, who tells us that a lease is "a demise or letting of lands or tenements to another for life, for a term of years, or at will or for any less interest than the lessor has in the property, for a rent or compensation reserved." Stroud tells us "a lease doth properly signify a demise or letting of lands, rent, common or any hereditament, unto another for a lesser time than he that doth let it hath in it." He adds that "the word 'lease' does not in law import a written instrument except in those cases where by statute a writing is required." This is of interest in comparing the requirements of English law of which he speaks with those of Roman Dutch law. We have no "Statute of Frauds" in British Guiana, nor have we any statute which deals with the subject except a solitary provision in Ordinance 6 of 1880 which requires the deposit of any lease in the Registrar's Office before any transfer thereof shall be valid. The law on the subject in this colony then is to be found in the Common law of the colony. To ascertain what the Common law

requires, reference must be had to such decided cases as have been heard in this colony and in other places where the Common law is the same as ours. It is to be regretted that the British Guiana law reports are not of much assistance, long periods elapsing during which no reports were issued. Such cases, however, as can be found will first be referred to, and then cases decided in South Africa will be considered.

To commence then with local cases. In the case of *in re J. Figueira, ex parte J. P. Santos & Co.* (Insolvency, 4. 9. 1901), I submit the learned Judge (Swan J.) went wrong in not distinguishing between leases for a short period and leases *in longum tempus*. In this case he is dealing with a lease for ten years, which comes within the category of leases *in longum tempus*. Applying the judgment arrived at in *Haynes v. Bishop* (28. 2. 1865), he states that the recording or depositing of the lease is not necessary in this colony to render the same pleadable in a Court of law here, but he goes further and states that such a lease need not be in writing at all. In effect he lays down that a lease for ten years need not be in writing. If he had confined such a finding to leases for any period under ten years I think he would have been correct, but to state that a lease for a period of ten years or longer need not be in writing is, I submit, quite wrong.

I have been able to find no authority which requires short leases (*i.e.*, under ten years) to be in writing, unless as already mentioned above, any party should wish to have such a lease transferred. Under the provisions of Section 27, Ordinance 6, 1880, no transfer of any lease shall be "good, valid or effectual in law" unless, amongst other requirements, the original lease is deposited in the Registrar's Office. This would necessarily mean the reduction of the lease to writing. The formalities, however, do not take the place of other formalities which are required in the case of the execution of long leases, and to such section 27 would not apply. Any lease executed before a Judge is retained in the office and put on record just as is any transport or mortgage.

In South Africa, prior to the settlement of the question by statute (which example should be followed in this colony) the question was unsettled, or rather the Courts had given opposing judgments. It would seem that the Placaat of 1744 in Holland was the first definite requirement of what may be called the registration of all leases for a period of 25 years and upwards. In the case of *Maynard v. Usher* (2 Menzies 170) heard in the year 1845, it was held that this Placaat was not law in Cape Colony and that a lease for 99 years neither required registration nor paid transfer duty. In the case of *Herbert v. Anderson* (2 Menzies 166) the Court also held that a parole lease for a year, followed by possession, was paramount to a subsequent written lease. In the Orange Free State, however, we find it held that the Placaat of 1744 was law, in so far as it required leases of 25 years and more to be registered, but that leases for less than that term were valid without registration. (*Fichardt and others v. Webb*, 1889. C. L. J. 258.)

In *Green v. Griffiths* (4 S. C. 346) Sir Henry (now Lord) De Villiers refers to both cases, *Maynard v. Usher* and *Herbert v. Anderson*. He says: "The case of *Maynard v. Usher* (2 Menzies 170) is generally cited in support of the proposition that a lease, however long, is binding upon a purchaser of the land from the lessor, but this proposition is too widely stated, for the purchaser, in that case, had full notice of the long lease of ninety-nine years, which was in fact annexed to and registered with his transfer deed. The Court decided that the Placaat of the 9th of May, 1744, was not in force in this colony, but even before 1744 it was the better opinion that a lease was not binding upon the particular successor of the lessor unless it was made *coram iudice rei sitae* or unless if made by a private contract it was for a shorter period than ten years. (Groeneweg ad. Cod. 4. 65. 9.) A lease for a longer period than ten years was regarded as a virtual alienation of the property. The Placaat of 1744 extended this period to twenty-five years and required all leases for that period or longer to be duly registered in the same way as every other alienation of immovable property." As stated above, any doubt on the point has now been settled by statute which is on the lines of the Placaat above referred to. It is most desirable that there should be legislation on the point in this colony, for the law here is as it was in South Africa before the statute in question was passed. Decisions here are very few and those that are on record are not all very satisfactory.

The case of *Administrator General v. Da Silva* (L. J. 20. 12. 1902) also decided by Mr. Justice Swan, takes us still further from the law as it exists in this colony, for there he lays down unequivocally that "a lease of land is a chattel, that is, movable property." In support of his finding he quotes an order on a petition dated 8th October, 1881, made by Mr. Justice Semper (in the absence of the Chief Justice Sir David Chalmers) to the following effect: "The warrant of execution prayed for is not necessary as the right title and interest of the within named Manoel D'Oliveira in and to the lease of the piece of land herein mentioned, with the building thereon, must be regarded as movable property." Reference to the original petition does not show for what term the lease existed, but the fact that a return was made that no movable property could be found and that application was made to the Court for leave to levy on immovable property shows that at that time at any rate opinions differed. If the lease in question was for ten years or upwards, the order, I submit, was wrong.

I am supported in my opinion of the finding in *Administrator General v. Da Silva* (*ubi supra*) by Mr. Justice Hewick in his judgment in the case of *De Freitas v. Gonsalves* (L. J. 18. 4. 1904.) Mr. Hewick states he is unable to agree with the decision in that case; he adds that he fails to see how a lease can be the subject of an interpleader suit (*i. e.*, that it is not a movable), but is of opinion that the sale at execution of the right title and interest in a lease of land can be opposed (*i. e.*, that it is immovable.)

The general rule is that all questions concerning the property in immovables, including the forms of conveying them, are decided by the *lex situs* (Westlake, Private International Law 221), and Professor Westlake specially calls attention to the rejection in England of the *lex loci actus* for the form of conveyance. Though we are not concerned here with the law in England in respect of leases, it is of interest to note that he points out that though terms of years in land are personal estate by English law, yet they are recognised in England as being immovables for the purpose of private international law and are governed by the *lex situs*. That difficulties arise from this two-fold character of English leaseholds is not surprising, and in this connection it is hardly necessary to do more than call attention to the difficulties which arise when the rules of succession to English personalty are considered. The case, however, of *In re Moses, Moses v. Valentine* (1908. 2. Ch. 235) before Mr. Justice Swinfen Eady is of special import here, having reference to the fact that it touches on the subject of Roman-Dutch law. Following previous cases he held, in a matter arising out of an English will, that the succession of leaseholds for years in the Transvaal depends on Roman-Dutch law (*lex loci rei sitae*) although the testator was domiciled in England.

The character of leases in Roman-Dutch law has been discussed and considered in several cases in South Africa, though as already stated seldom in this Colony. In the case *ex parte* Master of the Supreme Court (1906. T. S. 563) a question arose as to the investment of moneys in the Guardian's Fund on mortgages of immovable property, and the point to be decided was whether a stand (or lot as we should call it here) in Johannesburg granted by a gold-mining company for a term of ninety-nine years was immovable property. In the course of his judgment Sir James Rose Innes pointed out that the stand had been transferred to its holder by a deed singularly like that used in the ordinary conveyance of landed property, but being in effect a deed of lease with a currency of ninety-nine years, "The point is whether the rights given under a document of this nature are property included in the term 'immovable property' as used in the section.....If the rights are immovable property the fact remains that the document which confers them is in essence a lease *in longum tempus*, and this result would follow, that the Master would be justified in advancing money upon ordinary leases for ten years and upwards." In considering the Common law meaning of the term "immovable property" he has reference to Van der Keessel (Thes. 178), Voet (ad Pandectas l. 8. 18) and Matthæus (de Auctionibus l. 3. 13, and de Criminibus 48, 20, 4, 21.), and states, as regards leases *in longum tempus*: "The Court has held that as leases of this kind approach very nearly to actual alienation they are not valid against singular successors of the grantor without notice unless they are registered in the Deeds Office." And when considering the application of this case to British Guiana, it must be remembered that registration in the Deeds Office has by statute in South Africa replaced the method of execution required under the Common law. The Court then held that the lease under consideration was immovable property.

A more recent case, *Breytenbach v. Frankel Hochstadter* (1913. T. S. 301) was decided as recently as May last. In this case it was held that a lease of property for ten years or upwards is a lease *in longum tempus* and is equivalent to an alienation. It was further held that a contract (in this case a lease for a period of 16 years) alienating minor's property which had been entered into by a guardian on behalf of a minor or by the minor with the assistance of his guardian is not *ipso jure* null and void, but is merely voidable on the minor's attaining majority. Judge President de Villiers points out in his judgment that Sande in his treatise on Restraints upon Alienation, contests the doctrine that a lease *in longum tempus* can be considered to be an alienation, or that, as it were, the dominium was transferred. "Whatever may be the technical view," however, he adds, "the views of the Doctors have prevailed and been acted upon for many centuries, viz., that virtually such a lease amounts to an alienation." The same view was taken in an earlier case in the same Court, *Canavan and Rivas v. New Transvaal Gold Farms* (1904, T. S. 146). And see also *Collins v. Hugo* and another (*Hertzog* p. 203) where Mr. Justice Kotze, then Chief Justice of the South African Republic, described a lease for 99 years as a *separata bonorum species* and to be classed under the category of immovable rather than movable property.

With such authorities as given above, it is hardly necessary further to consider the nature of leases *in longum tempus*. To make this paper complete, however, it is now necessary to ascertain what is the method whereby the transfer of ownership in immovable property is effected. In cases where such transfer is specially provided by statute, as in the case of the Insolvency Ordinance (See Sec. 49, Ord. 29, 1901) reference need merely be had to the Ordinance in question, but in the case of immovable property generally, the conveyance thereof is with few exceptions governed in this Colony by the Common law. To effect a valid transfer Maasdorp points out that the following essentials are required (Institutes II.62.):— That the thing transferred be capable of being owned, that the transferor be the owner of the thing, or have authority to dispose of the ownership, together with an intention to transfer the ownership to the transferee, that the transferee accept the transfer, that there be *justa causa* or legal consideration for the transfer, and finally, that the delivery or transfer be made according to law. It is the last requirement which concerns this paper. To proceed again to South African law reports in the absence of anything bearing on the point in the local reports we find in *Harris v. Buissinne's Trustee* (2 Menzies, 105) it laid down that: "By the law of Holland the dominium or *jus in re* of immovable property can only be conveyed by transfer made *coram lege loci* and this species of transfer is as essential to divest the seller of and invest the buyer with the dominium or *jus in re* of immovable property as actual traditio is to convey the dominium of movables, and the delivery of actual possession of immovable property has no force or legal effect whatever in transferring its dominium. This rule of the law of Holland was not a mere fiscal regulation. It was with the rest of the law of Holland introduced into

this (Cape) Colony on its first settlement and has been acted on invariably ever since, except that, by certain Colonial laws, the Registrar of Deeds has been substituted for the Magistrates before whom in Holland transfers were by law required to be made." There has been no such change in British Guiana and such transfers have still to be made before the Judges. The words quoted above may be applied to this Colony. This rule as to transfer was introduced into this Colony, with the law of Holland, on its first settlement and has been acted on invariably (with occasional lapses) ever since. There is no statute or ordinance changing in any way this solemn legal transfer of immovable property, but rather such references as we have in any ordinance, as is to be expected, assume that the requirements of the Common law are complied with. Such a reference is to be met with in Section 26, Ord. 6., 1880 (Registrar's Ordinance) which deals with the execution and custody of transports and mortgages, etc. There it is laid down that "any transport, mortgage, lease, or other document executed before a Judge may in the discretion of such Judge, be executed in any part of the Colony." The execution before the Judge is naturally assumed, because, unlike Cape Colony, we have here never replaced the requirements of the Common law with any statutory provisions or brought the system up to date. And to digress somewhat here, it is of great interest to read what Mr. Justice Wessels (the author of a well-known History of Roman-Dutch law) says in his judgment in the case *Houtpoort Syndicate v. Jacobs* (1904. T. S. 105). "In the Roman law," he says, "we find nothing about registration in the transfer of land. In Western Europe, however, a custom sprang up in many places which required the seller and the purchaser to appear before some official and to state in the presence of witnesses that a sale of land had taken place. The transaction was then noted in a book kept specially for the purpose. This custom prevailed throughout the greater part of the Netherlands and was in the time of Grotius regarded as an inveterate custom. In many parts of the Netherlands, in addition to the registration, the sale had to be publicly proclaimed on three Saturdays or on three church days (*Recht. Obs.* part 3. obs. 32). There can therefore be but little doubt that the registration (or passing as we would call it in British Guiana) *coram iudice loci rei sitae* was for the purpose of publicity, partly that land should not be sold twice over to different purchasers and partly so that persons who had any claims upon the lands might assert these claims before the purchaser took possession. In Holland the registration took place before the Schepenen of the district where the land was situated. The system of registration was afterwards, by various *Placaats*, extended to hypothecations, servitudes, and other burdens. When the Dutch settled in the Cape Colony they brought over from Holland this system of registration and the titles to land granted by the Governors were registered before the Commissioners of the Court of Justice. No sales of this land and no servitudes imposed thereon were recognised unless these were registered against the title before the Commissioners."

Immovable property then in this colony can only be conveyed or transferred by formal solemn transfer before a Judge. It is essential to divest the seller of and invest the buyer with the dominium. Such transfer is, however, a formality, and can in no way make a transfer which is bad in itself, as for instance owing to some defect in the title of the seller, into a good and valid transfer. Nor can a mortgagor mortgage property which is not his own, even though such a mortgage should be permitted to be passed. A lease *in longum tempus* and a servitude (see *Steele v. Thompson* L. R. British Guiana, Vol. II. Old Series, 1860, p. 43) is in the same position and must be executed *coram legi loci*, which is before a Judge. It may be noted here that the case of *Steele v. Thompson* above quoted went to the Privy Council, the local judgment being there upheld.

An opinion has been expressed by a late Chief Justice and has in practice been given effect to in this Colony that leases of Crown lands do not come within the Common law requirements as to execution. The reasons for that opinion I have been unable to obtain nor can I find any provision in the Crown Lands Ordinance (No. 32 of 1903) dealing with the matter. We have seen above that in another colony all grants of land by Governors of that colony were registered before the Commissioners of the Court of Justice, whilst in this colony the registration of all such grants is provided for by statute in the Department of Lands and Mines (Ord. 31, 1903). It may be that such registration is taken to replace the requirement of formal execution, though if so one would expect some definite pronouncement in the Ordinance to that effect. The opinion referred to above distinguished between Crown land and what we know as Colony land, a distinction in my humble opinion with very little difference. Colony land would seem to be nothing but the land of His Majesty the King in his Colonial Government whilst Crown land presumably is the land of His Majesty the King in His Imperial Government. Land also which has been purchased locally by the Imperial Government cannot be described otherwise than as Crown land, whatever restrictions on use or alienation may be attached to it. Subject to what I have stated above, I can find no authority for the exemption of leases *in longum tempus* of Crown land from the Common law requirements as to the formality of execution and it is most desirable that if there is no authority for the present practice (notarial execution) that it should either be legalised or discontinued. But have we not been assured that our troubles will be at an end when the Common Law Commissioners have reported and have supplied a panacea for all our ills? Should such report deal with the subject of Registration of Title it is to be hoped that the minor matter of the registration of leases will not be forgotten.

THE SEA DEFENCES OF BRITISH GUIANA.

By H. SICCAMA.

At the time that the alluvial soil forming the coastlands of Guiana was deposited, the circumstances were different from those at present prevailing. The flood currents approached the coast from the north-east instead of from the south-east, as they do now. This is indicated by the direction of all the old estuaries, which opened their entrances to the north-east, whereas now they are all slewing round to the south-east.

While the alluvium was being deposited the mean sea-level must have been lower in relation to the land, as otherwise the shell reefs and sand ridges must have been higher to form a reticule of lagoons where fresh-water plants could exist and flourish and aid in the general rise of the surface. Most of those reefs and ridges are below the present high-water level and would be overflowed at high tides if it were not for the sea-dams, such as they are. What this means can be seen on the east coast of Berbice, where what were at one time cultivated lands are now brackish swamps.

Most likely too the dry land must have extended very much further seaward than the coast-line as it appeared when the first settlers arrived in the Guianas. The first depths of their plantations were then laid well back from the coast-line, so that their sea-dams were protected from surf by the courida and other trees left in front.

What the reason may be for the encroachment by the sea is difficult to determine in the absence of trustworthy information. It may be due to a slow oscillation of the earth's crust, as is the case in other parts of the world, through which the surface of the ground sinks with regard to the mean sea-level. It may also be that while the alluvial ground was deposited the form of the sea-bottom far out at sea was different, so that the coast of the mainland was more sheltered than now from heavy seas and there existed a bay between headlands—that to the north Trinidad and to the south Cayenne.

Whatever the state of things may have been many centuries ago cannot be ascertained with the information at our disposal. We only know that the coast-line is everywhere eroded, not so much by littoral currents like on the east coast of England and the west coast of Holland and Belgium as by the action of the surf, locally called the wash.

This wash does not act with the same energy all along the coast-line, but intermittently. Sometimes it is bad at one spot, in other years at another. It may be that where there is a temporary rest of the wash such a spot may at the time be more or less protected by banks travel-

ling with the littoral current and moving from east to west. The coast under the lee of the gaps between such banks would then be more exposed than the neighbouring parts. If the wash was only due to the slow sinking of the ground the erosion would be everywhere the same and constant.

That coast erosion is solely due to the surf is proved by the absence of littoral currents strong enough to carry away the eroded ground. In fact, this current coastwise over the broad flats is hardly perceptible, and the courida bush undermined and thrown down remains floating or lying where it falls. There certainly are stronger currents in and out of the estuaries, but in well-defined channels, and they hardly affect the mud-flats on either side, except in so far as these channels are slewing round more and more to the east towards the incoming tide.

It is probable, that when the first plantations were laid out the wash was already active and had been so for centuries before. The planters laid their front-dam back from the coast-line, as it was at that time. These embankments, protected as they were then by a wide belt of courida bush, needed no greater dimensions than the back-dams, where they only had to keep out the bush water. But as the sea-dams became exposed to the surf by the washing away of the courida these old dams were no longer strong enough and often not high enough to resist the oncoming waves. If at the time of these first symptoms the case had been understood, these sea-dykes should have been at once strengthened and covered with stone or hard material on the outside. But instead of this the most trivial and useless devices were resorted to. For instance, in some cases faggots of brushwood held down by young trees, driven through them vertically and built up on the seaside of eroded dams, were supposed to keep off the surf. But not being properly tied back to the dam, they swayed backward and forward with every wave and acted on the wet surface like a brush, making the destruction worse. Then somebody had heard of groynes without really understanding the principle of them,—that is, their use being to keep a current away from the dam. But no perceptible current existing, these groynes were worse than useless, in fact they added another cause of damage. The West Best groin is an instance of this mistaken policy and had no power to stop the destruction of the estates behind it.

The only efficacious remedy against the continuous loss of land is a really properly constructed embankment with a good stone covering on the seaward slope. But the best made work requires maintenance; if not maintained it becomes ruinous. Even the pyramids of Egypt are in ruins for lack of timely repairs.

If stone is not obtainable concrete blocks may be used, as there is excellent coarse sand obtainable in the colony as a covering. Ferro-concrete can also be used and is at present much in favour in Holland. It is light, an advantage where used on new-made dams, and compares favourably as to cost with a covering of natural stone—at least in Holland!

The whole question of defending the land from the sea lies in the value of the land protected. And this really is the cause of so many estates being abandoned. The sea-dams were too costly to keep up, even with the puerile and frivolous systems employed. It has been said, too, that often sums were booked to sea defences which, properly speaking, should have been charged to buildings or planting. But that is no concern for the colony in general.

If the colonists do not wish their alluvial lands to be ultimately swamped they should take the matter in hand while there is still time. An Ordinance by which all the sea defences of the colony would be taken in hand by the Government would not be such a grievous affair. With a long pull and strong pull and a pull altogether, the whole thing could be made thoroughly efficient.

It would not be such a stupendous affair after all. Great stretches of coastline would require little expense. For instance, the Demerara East Coast. The further the Sugar and Dauntless Banks on the Essequibo extend the less the wash will be on the mainland coast. The Best and Windsor and neighbouring estates are in a worse plight, as the waves there, coming through the Demerara channel, run up higher there than further to the west. But if a leading dam be built from the East Best groyae toward the Demerara bar these estates will then be under the lee of such a dam and it would be worth while to reclaim them then. Such a leading dam is the only efficient remedy to the continual shallowing of the Demerara bar and channel, caused by the deposit from the Essequibo East channel sweeping right across the fairway to the Demerara River.

The whole matter should now be taken in hand thoroughly. For the last forty years all sorts and conditions of men have been consulted—amateurs from the highlands of Scotland and Wales, sugar planters, worthy sea captains, mechanical engineers, and others with an axe to grind. Some of their advice may be useful; the proposed nostrums of others are remarkable, to say the least of them. There ought now to be information enough to act upon.

If you want to keep an enemy out of the country you must spend money on soldiers, sailors and guns. If you want to keep the sea out you must spend it on proper sea defences. If not the sea will encroach more and more till Georgetown will perhaps remain an island surrounded with mudflats, with here and there a piece of old wall or a crushing mill sticking out. Perhaps also Georgetown will go like Nickerie, and people will have to go to the Sand Hills. The climate there is salubrious and residence pleasant, as is proved by the remains of country houses and gardens of old. Life will be quite worth living there for people who can find something to eat. But whether this delightful spot will be easily reached from the sea with the Demerara channel no longer navigable is another question that will have to be considered when the time comes.

THE MUNICIPALITY OF GEORGETOWN.

BY LUKE M. HILL, B.E., M.INST.C.E.
(Honorary Life Member, R. A. and C. Society.)

I readily comply with a request from the Editor of "Timehri" to write an article on the Georgetown Municipality, prompted, I have no doubt, by his knowledge of my long association with its administration as one of its chief executive officers.

My distance from official records will, however, I fear prove a disadvantage, as in the absence of facilities of reference to them, I can only depend on my memory, aided by some notes of events taken by me from time to time in the course of my official life.

The older history of Georgetown has already been related by Mr. J. Rodway in "The Story of Georgetown," published as a serial in "The Argosy" February to May, 1883; and retold, with some additions, by Mr. Laurie Thomas in two interesting lectures delivered by him at the Middle School, Georgetown, in July and October, 1912, so there is no necessity to repeat it: suffice it to say that the Municipality of Georgetown dates from the year 1837, when it was incorporated by Ordinance No. 2 of 1837, during the Governorship of Sir James Carmichael Smyth, K.C.M.G., replacing the old Board of Police which had administrative charge of Georgetown up to that date.

The first meeting of the Mayor and Town Council was held on the 27th May, 1837, at which were present the following duly elected Councillors:—

HON. JOHN CROAL	WILLIAM BRUCE FERGUSON
HON. HUGH MCCALMONT	ALEXANDER WISHART
J. V. NEDDERMAN	SAMUEL D. LANDRY
HUGH ROGERS	GEORGE BOOKER

HENRY HOWES.

From amongst these the Hon. John Croal was unanimously elected first Mayor of Georgetown. In connection with this historic roll of ancient and worthy "city fathers," it is interesting to note that three grandsons of one of the number are at the present time in the service of the Corporation: also that No. 2 on the list, the Hon. Hugh McCalmont, was a forebear of that well known Irish sportsman and race-horse owner, Colonel McCalmont, now succeeded by his son, Captain McCalmont, owner of the celebrated winner "The Tetrarch" which at the last moment was scratched for this year's Derby!

Mr. David Rose was the first Town Clerk of Georgetown; but at the start there was in addition a Secretary to the Mayor and Town

Council, the two offices being amalgamated a few years later. There were several successive Town Clerks up to my time, when I found the office worthily filled by my old friend and namesake Mr. Jacobus C. R. Hill, whose portrait hangs in the Town Hall: he always claimed to be *the* "corporation" of the Mayor and Town Council! He was followed in 1892 by Mr. P. P. Fairbairn, who was succeeded in 1910 by the present holder of the office Mr. J. Barrington Woolford, a former Mayor of the city.

In the matter of Town Superintendents the Corporation was peculiarly fortunate in being but seldom troubled with the necessity of making new appointments, as in the course of its seventy years existence, only four such officers had to be appointed, namely:—

WILLIAM LYNC	who served from	1837	to	1852
WILLIAM HAYLEY	„ „ „	1852	„	1878
LUKE M. HILL	„ „ „	1878	„	1910
WILLIAM F. LAURIE THOMAS appointed 1910.				

At the time of the institution of the Municipality in 1837 the population of Georgetown was 16,500 and the length of the roads and streets as taken over from the Board of Police was only $12\frac{3}{4}$ miles with 36 brick and 11 wooden bridges and culverts. Since that date the population and the mileage of the streets have increased fourfold, and the number of bridges and culverts by several hundreds, including the introduction of many ornamental iron and concrete structures; and taken altogether, the expansion and improvement of Georgetown since its constitution as a Cathedral city in 1843 on the founding of the Diocesan See of Guiana, reflects credit on the enterprise and enlightenment of the corporation in its administrative capacity as a Municipality, more especially in view of the fact that the continued improvements have been effected practically without any increase in the rates and taxes until within the last two or three years, and only then necessitated through the creation of a separate department of Public Health and the increased expenditure thereby involved.

In common with most other corporations throughout the world, the Town Council of Georgetown has been the subject of adverse criticism from time to time by the press and more or less irresponsible members of the community, who, generally speaking, are themselves too mean spirited to undertake the ordinary responsibilities of citizenship by an active participation in the administration of their own city: indeed so manifest is this apathy in Georgetown that but comparatively few of the more prominent members of the community even take the trouble of registering their names as voters, much less offering their services as city councillors, though ever ready to find fault with and belittle the efforts of those who do endeavour to the best of their abilities, to serve their race and generation as members of the corporation; a thankless job at best, the world over.

The Mayor and Town Council have had a few occasional "brushes" with the Government during its career, outstanding amongst these being that of 1839-40, when it was sought by special legislation to restrict certain rights and privileges conferred by the Ordinance of Incorporation; but on the petition of the Mayor and Town Council to the Crown, these restrictions were disallowed by Her Majesty Queen Victoria by an Order in Council issued on the 5th March, 1840, thereby "re-affirming the Chartered Rights and Privileges of the Corporation as granted by Her Majesty's predecessor King William IV."

Again about the mid-seventies we find the Hon. W. A. G. Young, Government Secretary, in the Court of Policy somewhat rudely threatening the powers of the creating authority to wipe out of existence the thing created, if ever the necessity arose, with special application to the Municipal Corporation; and in or about the years 1902-03 under the Swettenham-Ashmore Administration there were somewhat strained relations between the Government and the Town Council over the questions of "subventions" and water rates, happily adjusted through arbitration and wiser counsels of moderation. About the same time there was a lawsuit between the Government and the Town Council in reference to the possession of and title to the streets, dams and trenches of Charlestown forming part of Le Repentir Estate: this was decided in favour of the Mayor and Town Council by judgment of the Supreme Court. Again at the present day the proposed legislation for the reconstruction and reformation of the Council seems not unlike a repetition of the attitude taken up by the Government on previous occasions.

I admit that a fair representation of the Government on the Council, as a large property-owner and taxpayer of the city, as well as that of joint stock companies holding property and large commercial stakes in the city, is a reasonable proposition and one tending to the extension of the Council's dignity and influence for good in the community; but any attempt towards lessening the number of Councillors, or the representation of the several wards of the city, and taking away the powers of the Council in the nomination and appointment of its chief executive officers and the general management of its own affairs, seems to me but another attempt to restrict the "Chartered Rights and Privileges of the Corporation," and as such should be resented, and resisted by petition to the Crown, as was successfully done seventy five years ago.

Curiously enough, Georgetown's chief structural improvements have followed on disastrous fires: first that of Newtown in 1828, the district being rebuilt under the very restrictive provisions of the Newtown Ordinance of 1829, which in addition to special regulations governing the erection of business premises, prohibited the establishment of spirit shops, cooperages and other dangerous trades within the district. This Ordinance was, amongst others, repealed by the present Town Council Ordinance, No. 25 of 1898. Then we had the great Robbstown fire of 1864, burning out an area of over ten acres, followed two and there

years later by the two South and North Cumingsburg fires, these three great fires affording opportunity for the widening of Water Street from Newtown to the Railway line and the effecting of other important improvements in town planning.

Now again another opportunity presents itself in the recent extensive conflagration in Werk-en-Rust, which completely wiped out what came to be known as the Chinese quarters, embracing the oldest, slummiest and most insanitary and congested portion of the city, dating from 1797, all now, it is hoped, to give place to improved conditions of streets, building-construction and sanitation.

Other stages of improvement, marking the activities of the Municipality in the administrative work of the city, may be noted by the following dates as fixing certain events:—

1866-67.—The establishment of the Georgetown Water Works and the laying down of a pipe service of water supply for the city as a direct outcome of the then recent serious fires. The gradual and continuous development of the water service up to the present day is a history in itself, did space permit of its telling; but I may just say that its beginning was a very modest one, embracing but a few miles of street mains and one small beam engine of 25 h.p. By 1885 the working plant had been increased to three of these engines in order to meet enlarged requirements, which, however, still proved inadequate; and so in 1897 a triple expansion Worthington pumping engine of a capacity of 3,000,000 gallons was installed, followed in the next year by a second Worthington engine of 1,250,000 gallons, designed as an auxiliary pumping plant for night supply mainly. Rapidly increasing requirements, through extended street mains and increased consumption of water, made it necessary to augment the pumping plant by the erection of a third Worthington engine of 5,000,000 gallons capacity in 1904, when the last of the old beam engines was cleared away. Again at the present time, after the lapse of another ten years, a fourth engine of the latest Worthington type has just been installed, the smallest engine of 1898 being discarded. In the meantime the street mains have been gradually extended and enlarged, and at the present time have a total length approaching 50 miles.

The combined pumping power now available has a capacity of 18,000,000 gallons in the 24 hours, which should be ample to meet requirements for many years to come. Indeed, in view of the fact that the domestic water supply is mostly derived from the rain water stored in vats and tanks, the present output from the Water Works, which I understand is reckoned at about 5,000,000 gallons per day, equal to 80 gallons per head of the population, seems extravagantly high, and points to serious leakage or waste somewhere.

In view of the widespread range of street mains, and their increasing distance from the distributing centre, there must be increasing difficulty in maintaining adequate pressure in the mains themselves for fire extinguishing purposes, as has been manifest at several recent fires; and it will therefore become necessary to maintain a service of motor fire engines, always ready and available as a second line of

defence, to augment the pressure in coping with serious conflagrations, and more especially in cases where a failure of high pressure in the street mains occurs through a burst pipe or other accident to the central pumping plant. In dealing with the general water supply of the city, I think it only right to record a large measure of praise to my old chief, the Hon. William Russell, for his long continued and untiring efforts, ultimately crowned with success, for obtaining an improved supply of water for the city, villages and estates connected with the Lamaha Canal and East Demerara Water Supply Conservancy, in the initial stages of which work I had the honour of being associated with that gentleman, as long ago as 1874.

1871.—The Georgetown (B.G.) Gas Company founded with a capital of £68,000. The street lamps were first lighted with gas on the 31st January, 1873, and a gas supply made available to the public a month later, at what seems to us now an extravagant price of 18s. 9d. per 1,000 cubic feet, subsequently reduced four years later to 15s. and again to 12s. in 1894, after the advent of electric light in 1889 by the British Guiana Electric Light and Power Company, which undertaking was eventually purchased by the Demerara Electric Company—a Canadian corporation—as from 1st January, 1900. The first partial lighting of street lamps with electricity took place in 1892, and subsequently the street lighting contract was divided between the two companies; but in 1901 the Council failed to come to terms with the Gas Company for a renewal of their portion of the contract: and so, after struggling on for some years under adverse conditions of competition with electricity, the Gas Works finally closed down on 31st December, 1901, and the company passed out of existence, leaving the Demerara Electric Company masters of the situation and sole purveyors for the public and private lighting of Georgetown. In 1898 an advantageous offer was made to the Mayor and Town Council by the Gas Company to purchase their undertaking, which I strongly recommended, believing that with improved methods of gas manufacture the business could be made a profitable one, especially with the power in the hands of the Council of dividing the municipal lighting between gas and electricity, which would have ensured the success of the undertaking, and fully justified the action of the Council by preserving to the city and its inhabitants two sources of lighting, instead of having it, as at present, in the hands of one company alone. However, the proposition did not find favour with the majority of the Council and so the negotiations fell through, to the loss of the Municipality and the community, in my opinion.

1878.—Taking effect of the Vlissengen Ordinance No. 8 of 1876, under the provisions of which Lacytown was reconstructed and improved; and the new district of Bourda, as well as the Botanic Gardens, laid out and developed. The streets in Lacytown now known as New North Street and New South Street were previously only narrow alleys or footpaths, known as Church Alley and Love Lane, respectively; and St George's Oval was specially designed and laid out as a site for the new Anglican Cathedral, the former brick building having been erected on a narrow restricted site on the Company Path, flanked on either side by main draining trenches, which eventually led to the destruction of the structure through subsidence of the foundations.

The entrance avenue leading to the old Cathedral, together with the entire width of the Company Path extending from High Street to the Oval, having been handed over by the Government to the custody of the Corporation in 1907, the land was enclosed by an iron railing, and laid out and planted as a Promenade Garden in 1908, forming an attractive feature in the prominent and central position occupied.

The Public Health Ordinance, No. 8 of 1878, passed, under the provisions of which the first Building Regulations and Drainage By-Laws for the city were framed in 1883-84; and many sanitary improvements effected, including compulsory provision for the storage of rain-water on all occupied premises and the general sanitary inspection of all lots and yards throughout the city.

1879-80.—Street tramways, worked by mule draught, established by the Georgetown Tramways Company; subsequently acquired by the Demerara Electric Company and converted into an electric system in 1901.

1880-81.—Erection of Stabroek Market, an iron structure covering about 75,000 square feet, together with the construction of a river wall and the reclamation, filling in and concreting of about 50,000 square feet of river foreshore, at a total cost of \$236,000, mostly raised by loan and since paid off. The foundation stone was laid by Mrs. Kortright, wife of the Governor, on the 17th July, 1880, during the Mayoralty of Mr. George A. Forshaw. The designers and constructors of the Market House itself were the Edge Moor Iron Company of Delaware, U.S.A., and the contractor for the supply and erection of the iron work, Mr. Nathaniel McKay, of Philadelphia, U.S.A., the price named in his contract being \$132,855. There were considerable disputes with the contractor over weights and constructive details of the structure. The ornamental portions, cornice mouldings, etc., were formed of galvanized sheets, bent and soldered to shape, prompting the late Father Scoles, S.J., himself an eminent architect, to designate it a "tin-pot" structure.

1887.—Some 108 acres of land, part of Plantation Thomas, purchased from Mr. Quintin Hogg, and laid out as a new ward of the city, named Queenstown, in honour of the Jubilee of Her Majesty Queen Victoria; her name is also given to a square in the centre of the district left vacant as a recreation ground.

1889.—The Town Hall erected at a cost of \$70,500, including purchase of site and the city organ. The architect of the building was the Very Rev. Ignatius Scoles, S.J., and the contractors, Messrs. Sprotons. The foundation stone was laid by His Excellency Sir Henry T. Irving, K.C.M.G., on the 23rd December, 1887, during the mayoralty of Mr. George A. Forshaw, and the building formally opened on the 1st July, 1889, during the Mayoralty of Mr. James Thomson, by His Excellency Viscount Gormanston, K.C.M.G. A commemorative marble tablet recording these events has been erected in the entrance hall.

1892.—Food and Drugs Adulteration Ordinance, under which the municipal sanitary officers were first authorised to take action in 1898, since which time, with their co-operation and that of the Police

Department, a large and satisfactory reduction of adulteration was effected in Georgetown, more especially in regard to milk supply, mainly through the untiring efforts of Professor J. B. Harrison, C.M.G., Government Analyst and Director of Science and Agriculture.

1902.—The suburban district of Wortmanville incorporated with the city as part of the Werk-en-Rust Ward, involving the opening up and construction of new streets and the erection of several bridges and culverts.

1905-06.—A Mortality Commission appointed by His Excellency Sir Frederic M. Hodgson, K.C.M.G., on which I had the honour of serving. The report was a comprehensive one dealing with all aspects of the question and had far-reaching results, ultimately leading to my own retirement and

1910.—The establishment of a Health Department for Georgetown, embracing all sanitary administration, under charge of a "whole-time" Medical Officer of Health, as separate and distinct from the Town Superintendent's Department, the latter to be confined in future to engineering and general constructional works.

1912.—Incorporation of the Albouystown village suburb with the city of Georgetown as a portion of the Charlestown Ward.

The history of the sanitary administration of Georgetown is interesting in association with any story of its Municipality.

When I first arrived in Demerara in the year 1870, Dr. Whitlock was in charge of the department as Sanitary Superintendent, old Dr. Dalton being at the same time the consultant Health Officer of the city.

Some years later on the death of Dr. Whitlock, the charge of the sanitary staff, or Inspectors of Nuisances, as the officers were then termed, was passed over to the Town Superintendent; and this was how I found the arrangements when I joined the municipal service in 1878, and they so continued up to the time of my retirement in 1910. After the coming into force of the Public Health Ordinance in 1879, Mr. George Bury was appointed Chief Sanitary Inspector, and I had that gentleman's assistance up to the time of his death in 1884, but no further appointment to that position was made.

During the interval between 1878 and 1910 I had the pleasure of working in perfect accord with no fewer than seven medical colleagues, who filled successively the post of consultant Health Officer for the city and were always available when required for consultation and advice on all sanitary matters. In the early part of 1909 the colony was favoured with a flying visit from the late Sir Rubert Boyce, an acknowledged authority on Yellow Fever, Malaria and Mosquitoes, who had been duly accredited to the West Indies by the Secretary of State for the Colonies on a tour of inspection.

The main results arising out of his visit was a hurrying up of many of the recommendations of the Mortality Commission of 1906, mainly directed against the propagation of mosquitoes, the cutting down of trees, the filling up of canals and trenches, and the immediate creation of a separate department of Public Health for the city, all of which have been given effect to without, so far as I am aware, any great or marked improvement, except in regard to a very satisfactory reduction in the abnormally high infantile mortality, which, naturally, has had also a reflex action on the general death-rate of the city, which is certainly a matter for congratulation: but apart from this pleasing feature, probably resulting from the appointment of Lady Health Visitors and the establishment of Mothers' Clubs and training schools, the other results appear to be of a somewhat negative nature: the mosquitoes, I hear, are as bad as ever; the filling up of street reservoirs, with their stock of *Victoria Regia* and other water lilies, and the cutting down of trees have removed some of the characteristic features of Georgetown, as "the garden city of the West Indies": enteric fever has been greatly on the increase since 1908: and the extra expenditure involved by the upkeep of the separate department amounts to over \$12,000 per annum.

Taking the figures from the Registrar General's returns as embodied in the last annual report of the Surgeon General, the deaths from typhoid fever in the colony, and mainly contributed by the city of Georgetown, have risen from 8 to 93, averaging 60 deaths per annum, as against an average of 8 deaths per annum over the previous twenty-two years, three of these years recording a single death only. These figures are significant as pointing to a very alarming and continued increase of enteric fever within recent years, aggregating, probably, as many as 500 cases in a single year. Writing as a mere layman, I have no hesitation in attributing the cause to infection from drinking water stored in vats, containing impurities washed down from the collecting roofs and left without any natural means of purification.

For this reason I had been for years trying to impress on the community the importance of sterilizing by heating and boiling the vat-stored water before use, but I was like "the voice of one crying in the wilderness" for any good I did. A contrary opinion, I am aware, prevailed for some time, that the infection arose through the milk supply, and I believe a few isolated cases were traced to that source. Much as I approve of every possible effort being made to obtain a clean and pure milk supply, yet in view of the fact that almost every drop of milk drunk in Georgetown is effectively sterilized before use, through the necessity of "scalding" or boiling it in order to prevent it from souring, I consider this general theory of infection from milk alone to be untenable, so far as Demerara, or any tropical city similarly conditioned, is concerned; and this view, I believe, is now more generally accepted in at least minimising the danger.

Coming now to the conclusion of my paper, I may say that I have been personally acquainted with no fewer than eighteen Mayors of

Georgetown, and have served under fourteen of that number. I may hold my own opinion of their respective merits as Chief Magistrates of the city, but that of course I must keep to myself, as a matter of municipal policy as much as personal convenience; but this I will say, that I found them all honourable gentlemen, having the interests of the city and the welfare of the community closely at heart; and my personal relations with each and all were uniformly cordial and in every respect satisfactory.

The most picturesque of the Mayors I have known was the late Colonel Inlach, Commandant of the old Militia, for many years a familiar figure in Georgetown.

A memorial bust of this gentleman may be seen in the entrance hall of the Victoria Law Courts, but it loses, in great part, its identity with the original, lacking his high-crowned and characteristic headgear.

The Colonel was popularly known as "Old Blazes," due to the customary fervency of his language; and if he had been presiding over some recent meetings of the Council it is easy to imagine what would have been the vigorous terms of his rulings, and the consequent heat of the surrounding atmosphere!

The most serious rebuff received by me from the Mayor and Town Council was when, by solemn resolution, the following harmless paragraph was struck out of my annual report for 1891 as being *ultra vires*:

"Referring to the building scheme of the Society for the Protection of Children for the erection of improved dwellings for the working-classes, alluded to in my last annual report, I have now the pleasure of announcing that actual building operations have been commenced on one of the selected sites; and it now rests with the people of Georgetown to further develop the scheme by subscribing to the bonds of the Society, and so placing it in funds for extending its building operations. The encouragement of this and other kindred Associations for the amelioration of the sanitary conditions, and improving the homes of the masses of our people, is a worthy and proper object for the attention of the Municipal Authority."

However, I had the satisfaction of knowing afterwards that many of the Councillors expressed regret at having voted as they did under a misapprehension; and I know that I had the sympathy of the Press and that of many influential citizens of Georgetown in my simple effort to aid the laudable objects of a purely philanthropic institution.

I will conclude what I fear may be considered a prosy and uninteresting paper by wishing my old friends and patrons, the Mayor and Town Council of Georgetown, continued success and the support and encouragement of the citizens in the administration of the municipal affairs of our city.

THE MUNICIPALITY OF NEW AMSTERDAM.

By J. VAN SERTIMA.

Historians may take exception to the atrociously common reference to Berbice as "the ancient county" on the ground of inexactitude, but they cannot challenge the antiquity of the Municipality of New Amsterdam, for it can legitimately claim it, as also the privilege of established fame and prescriptive veneration. Nor is it difficult to trace its genealogy. With other names and with functions in the main the same, corresponding with social mutations and development, it has existed since the time of William IV. By an Ordinance (New Amsterdam Regulations) enacted on the 24th May, 1825, the year of the appointment of Sir Benjamin D'Urban as Governor of Demerara and Essequibo, and two years after the slave insurrection on the East Coast of Demerara, the first Board of Management was formed for the superintendence of the town. Yet a few months and it became necessary to pass another law; and during the same lustrum there was yet another enactment having reference to the governance of New Amsterdam. Seven years passed by and then the Georgetown Town Council was established. The year which saw the termination of apprenticeship of prælia labourers in the colony, Emancipation unalloyed, that is to say, saw the passing of an Ordinance establishing a Board of Police over New Amsterdam. Across the stage of the memory of no one do the deeds of this Board stalk majestically, and no recorders are there who disport themselves in the fields of local history of this kind. Much of what it did has disappeared down the gulf of time. During its short life the Board of Police saw to the laying out of the roadways, being authorised to take over as public streets the cross-roads or lanes, on the application of the majority of the owners of property in the lanes; and these owners were compensated. It also established, on mud lot 14 (the front site), a market the building of which was begun in 1840, the Government having granted the land for the purpose. Forty-five years later the proprietor of mud lot 15 alleged that the Council's market was on part of his land, and it was suggested that the Attorney General's opinion should be taken; but Mr. Robert Samuel, a member of the Board of Superintendence, argued that as the Council had been in undisturbed possession of the strip of land in dispute for more than a third of a century, the Council's ownership could not be questioned. An appreciable percentage of the revenues of the Board of Police consisted of retail spirit shop and other licences.

The necessities of the hour called for more energetic municipal functioning, and in 1844 the Board of Superintendence came into being. All the minutes, books of account and vouchers of the Board of Police were "closed and signed" and lodged with its successors. The new Board had an Ordinance all to itself. It was numbered 8, and it is a

coincidence that the Ordinance which established its successor seven and forty years afterwards, the New Amsterdam Town Council Ordinance, is also numbered 8. The 1844 Ordinance defined the boundaries of the town, which remain as they are to-day—on the north by the Ordinance lands, on the east by Plns. Smithfield and Vryheid, on the south by Plu. Overwinning, and on the west by the river Berbee. This area, about 554 acres, fell to the municipal care of the Board of Superintendence, and has fallen now to the not less energetic management of the Mayor and Town Council which can do without much of it. Not that the town is too big, but that it has an uneven keel of social aspirations. For many years a centripetal rather than a centrifugal tendency, as in the case of London, has been in operation; and so it has come to pass that the southern part of the town has put upon itself a sylvan picturesqueness, the middle portion of which, according to some petitioners who addressed the Council lately, being a veritable lair for wild beasts and creeping things. What must it have been in the 'forties? A kind of place, I suppose, that would have suited good, old Gonzalo down to the ground. If he was eager to "give a thousand furlongs of sea for an acre of barren ground—long heath, brown furze, anything," he would assuredly have gone a little higher for Stanleytown.

The Board of Superintendence consisted of seven members, and the qualification of a voter was ownership or representation of any house or tenement rated at the value of \$400. Then, as now, "no person who may be in arrears for Town taxes more than six months shall be eligible to be elected or to serve as a member of the Board or to vote in the said election." Then, as now, monthly meetings were held, but on no fixed day. Then, as now, punctuality was regarded as a thief of time, for the convenience of members would not have been shackled by a clause naming a particular day of meeting. The population of the town at this time could not have exceeded 4,000, about half what it is to-day. The chief executive officers included a Receiver of Town Taxes, a Secretary, a Surveyor of Works and a Clerk of the Market. It appears that at one time or another this Surveyor of Works—what's in a name?—not only saw to the kind of work which is performed to-day by the Town Superintendent, but was also an Inspector of Nuisances; and also he actually collected the taxes which he handed over to the Receiver of Taxes, the cashier of the Board. The Secretary's duties included the taking of "full minutes" (the same words occur in the Town Council Ordinance) of all proceedings of the Board, but reference to the minutes shows that they were by no means full, but, properly enough, crisp, business-like epitomes. The functions of the Board were pretty much what the Council's are to-day; but, strange to relate, in none of the Ordinances dealing with the management of the town, not even in the present obsolescent Ordinance, is there any specific obligation to light the streets of the town. The Fire Brigade was a poor thing in those days, if only because there was no water supply. Yet the Board had "the direction of the public fire-engines," and had "to cause the same to be exercised from time to time, to have all the necessary repairs made, and to keep

them in efficient working order, and fit for service on the most sudden emergency." The Court of Policy seems to have exercised greater control over the finances of the Corporation than the Executive Council does to-day. It had to approve of the Estimates before the assessment for taxes was authorised. It is not so to-day, albeit the Auditor General is not precluded from taking exception to this or that item of expenditure, and emitting post-audit growls. In the 1844 Ordinance it was enacted that "whatever moneys are required for the maintenance and keeping in order of the said town, the Board shall, with due regard to economy, form an estimate and submit a plan for raising the funds required in such manner as they, in their discretion, may consider equitable towards all classes of the inhabitants, on which the Governor and Court of Policy, if they approve thereof, will authorise such assessment as may be found expedient and grant the requisite authority for levying the same." This estimate had to be "formed" and an administration statement prepared and published in the month of February, as now. The "requisite authority" took the form of a solemn Ordinance, and up to a few years before the date of the establishment of the present Town Council, the Statute Book contained, every year, a New Amsterdam Tax Ordinance. Since 1891 a "Tax Resolution" passed by the Council is the self-given "requisite authority."

In the town regulations we find some extant to this day. For instance, all proprietors, renters or occupiers were required to have their respective lots or parcels of lots weeded in March and September. There was also a penalty promised in respect to the improper erection of buildings. There was then the fear that the river would erode and be mischievous. Hence no building or shed of any description could be erected within ninety feet of the centre of the draining trench of the public front dam (the Strand), nor within three feet from the respective side-trenches or within twelve feet from the draining trenches of the public middle road (High Street) under a penalty of \$300. This inhibition still remains. Properly enough, no building with a thatched roof was tolerated. In after years, when some East Indian settlers reared these unsightly huts in Stanleytown, an exasperated Mayor caused them to be demolished. As the fire-extinguishing apparatus in possession of the Board was rude and inadequate, the law was particularly stringent with regard to kitchens. These had to be provided with a fire-place or hearth and a chimney of brick or stone; the chimney to be of sufficient height "so as not to endanger the neighbourhood or not to annoy it with smoke, and should any oven be required the same shall be connected with and ventilated by such chimney." The kitchen floor was to be of stone bricks or solid earth. Now mark the severity of the clause:—"and in case any such kitchen or cooking house shall hereafter be erected contrary to the foregoing description, or in any case any kitchen or cooking house already erected be not altered as aforesaid within the said period of six months, in either of said cases, the proprietor of the lot, known as such in the books of the Receiver of Town Taxes, shall incur a penalty of fifteen dollars in the first instance and double that

sum during every succeeding calendar month until such kitchen, cooking house or oven shall be made and completed according to the foregoing description and the lot and buildings thereon shall be liable and executable for such fine or fines." One may be sure that there were very few if any tenement rooms in those spacious days. The poor there were, however. For them allowance was made—"provided nevertheless, that in case it should be made apparent to the satisfaction of the Board that certain poor persons are unable to bear the expense of building kitchens with brick fire-places, chimneys and ovens as before described, the Board shall have the power and direction of provisionally exempting such persons from the compliance therewith; but in lieu thereof the proprietor or renter of any such dwelling house or tenement so exempted shall be bound to have an outhouse for a cooking place built of such materials and in such a manner as shall be approved of by the Board for such purpose and any person coming under the description of this latter clause neglecting or refusing to comply with the provisions thereof when the said period of three months or within such further time as may be allowed by the Board, shall incur a penalty of \$5 in the first instance and of double that sum during every calendar month of continuance in such neglect and the lot and buildings thereon shall be liable and executable for such fine or fines." Fireplaces in and about foundries, smithies and bakeries had to be sufficiently protected; and any cooperage, carpenter's shop or workplace, boat-building establishment or bakehouse had to be swept and cleared of shavings or other combustible matter every day on leaving off work, subject to a fine of \$5, to be paid by the occupier or person having charge of such establishment for every neglect thereof.

In 1852 the Board of Superintendence was dissolved, a new one taking its place. The election of this Board was a peculiar proceeding. The votes were to be in writing, "and signed by the party voting, specifying therein at full length his or her qualification and such votes shall be sealed up and shall be deposited in a locked and sealed box placed for that purpose in the office of the Assistant Government Secretary in New Amsterdam, who shall transmit the same to the Government Secretary to be laid before the Governor and Court of Policy to be opened, and the votes shall be examined and the person having the highest number of legal votes in his favour shall, if duly qualified, be held and considered to be the senior member of the Board of Superintendence aforesaid, and the person having the next highest number of legal votes in his favour shall, if duly qualified, be held and considered as next in seniority, and so on, and the names of the elected members in such order of seniority shall be duly put in the *Official Gazette*." As to subsequent elections the procedure was much the same as it is to-day—devoid of pomp and circumstance, and yet so simple as to incite even the unsophisticated to be naughty, for the voter is not called upon to sign his name in the presence of the Returning Officer. Nowadays the voting paper may be either written or printed, but according to the 1852 Ordinance, there was no reference to a printed document. So it came to pass that a

pretty quarrel took place at an election in May, 1881. Here it is—an excerpt from the minutes :

Present:—

C. E. HOOTON, Senior Member.
J. D. DICKINSON.
R. SAMUEL.
G. H. DICKINSON.

The votes for a new member of the Board in room of Mr. W. Leslie, whose qualification ceased as attorney for the late Dr. Carney, were opened by the members.

The question was raised whether votes should be in writing or print. Mr. Samuel gave it as his opinion that the Ordinance distinctly stated that the votes should be in writing and signed by the parties voting, that the requirements were separate and distinct.

Mr. Hooton moved that the votes be read.
Not seconded.

Mr. G. H. Dickinson moved that the printed votes be not accepted, not being in conformity with the notice.
Seconded by Mr. Samuel.

Mr. Hooton moved as an amendment that the votes on both sides be counted scrupulously as to qualification.
Original motion carried.

Mr. Hooton moved that the printed votes be preserved for reference and protested against their being thrown out, that their number be taken, as he does not consider the Ordinance objects to printed votes as long as the qualification of each voter is fully set forth, and moved that all votes be examined, and called on the Secretary to take down the names of the voters for Mr. White which he would read out. Having read out sixteen names, that of Mr. R. Samuel was read and Mr. G. H. Dickinson proposed that it be considered good. Mr. Hooton objected because the paper did not specify what Board of Superintendence was meant, and the vote might be for some other place in the Colony. The names of H. K. Davson, Sylvester Gomes, and J. D. Dickinson, be also objected to on the same grounds.

Mr. J. H. Dickinson moved that the foregoing four names be considered good, and moved that Mr. N. White be declared elected, seconded by Mr. Samuel, when Mr. Hooton rose and left the meeting which was broken up thereby.

In consequence, another election had to be held when Mr. E. C. Weddall was returned, having obtained fifty-eight votes against fifty-four polled for Mr. N. White. Either the owner or the representative of the owner of household property of the value of \$1,000 was eligible to be a member of the Board. On one occasion it came to the knowledge of Mr. Robert Samuel that Dr. Carney who had left the colony on furlough and who was represented on the Board by Mr. W. Leslie, was dead, and he forthwith moved that Mr. Leslie be unseated. Some members demurred at this, inasmuch as there had been no official announcement of the death, but on the matter being referred to the Attorney General,

Mr. Leslie lost the seat. If an elected member refused to serve he was liable to a fine of \$200, but no member of the Court of Policy was bound to serve or any one who could "assign a satisfactory reason for declining to serve." The merits of such reason had to be determined on by the Governor and Court of Policy. As now, no member could be elected except by his own consent during the two years next after his going out of office. As now, the two senior members retired every July.

In those days the Board, as already stated, had not the power to pass a tax resolution and proceed to the collection of the taxes. A regular Ordinance had to be passed by the Court of Policy, with such a preamble as the following:—"Whereas the Board of Superintendence of the Town of New Amsterdam, in the County of Berbice, have laid before this Court a Statement of their funds and of the sum by them required to be raised by taxation for the service of the present year. Be it therefore &c." Up to the establishment of the Town Council in 1891 only private property was subject to taxation. The property of the Crown and Colony was exempt, presumably because the Government gave a grant-in-aid to the Board, as conscience money, I suppose, for the commandeering by them of the proceeds of certain licences which were collected and appropriated by the Board of Police. The arrangement is now changed, the Government having decided, for the past ten years, to be regarded as ordinary ratepayers. They contribute also a moiety of the cost of the maintenance of the roads and bridges in the town. Although that part of New Amsterdam known as the Winkle lies within the municipal confines, the property therein has never been assessed for taxation, and, indeed no municipal cognisance is taken of it. The Winklers fondly hug the belief that they are a chosen people, sacrosanct from taxation, but such is not the case. And though whenever the Council takes courage in both hands and impose taxation in that quarter, there will be a howling and gnashing of teeth, the law will be found to be on the side of the tax-gatherer. Manses and parsonage houses have all along enjoyed immunity from taxation also, an immunity to which they are not entitled, and of which at last they are being deprived this year, at the instance and instigation of the present Town Clerk who, regardless of tradition and prescription, has assaulted the citadel of the non-taxpaying Zion. I trust the grand array of the members of the Board and Council, in abstaining from doing their duty by exacting the impost in respect of the manses, were not imbued with the idea that they were laying up treasures in that quarter where, we are told, neither moth nor rust doth corrupt and where thieves do not break in and steal.

A godly percentage of the taxes due is collected within the year nowadays. It is hardly to be expected that, in a town of splendid antecedents and aspirations untamed in spite of evolutionary changes making not for economic betterment, the payment of taxes will be as prompt as it is in many villages where individual wants cannot increase as rapidly as in a town proud of its age, still prouder of its prestige, unwilling to utter the *Fui* but having the *Resurgam* ever on its lips.

And well it may thus hope, for the whirligig of time has done stranger things than the work of rehabilitation. But even in times that may be accounted more prosperous than the present, the sense of obligation to pay the taxes was somewhat dull. Hence it came to pass that Ordinance 1 of 1886 (New Amsterdam Tax) enacted that in case the first moiety of the tax was not paid fifteen days after it became due, the whole tax for the year became payable and recoverable. This seems harsh, but the late Town Clerk, now in the Elysian fields, thought it was not too stringent, and as Mr. George Hicken (he had been a member of the Board in 1878) was known to be as kind-hearted as Goldsmith's "Man in Black," it can be taken for granted that his opinion reflected truth. We have him saying that "I have found from experience gained since my assumption of office in 1888 such a law was urgently needed if the wheels of the Municipal coach were to be kept running." Some of the cash book entries before this date show that some ratepayers owed for seven years. In 1886, we gather from the minutes, the President and a member of the Board were appointed a Committee to "go over the list of the names of those in arrears from 1880 to 1885 and to recommend for exemption such as appeared to them to be really destitute, the Secretary furnishing a list of such names to the next meeting." The Board clearly had no right to exempt any private party from the obligation to pay taxes. Yet a few months before this time we read:—"Letter from ———, asking time to pay the taxes due on her property as she was very poor and a widow," and the Board "regretted that ———'s application could not be entertained, as no partiality can be shown to individuals in the matter of the collecting of taxes." Here is another entry not without interest:—"Letter from J—— J——, proprietor of part lot 41, Stanleytown, informing the Board that the Marshal had been instructed to levy on and sell his property for taxes. He further stated that he was 71 years old and barely able to earn his daily bread, that for fifty years he paid taxes to the Board, and being now unable to continue doing so, he asked the Board to buy in his property and allow him to live in it for the balance of his life, which he felt sure, will be short." The Board did not enter into a calculation as to probabilities, nor of the bargain it may or may not have made, but deferred consideration. Meanwhile the Town Superintendent came to the rescue by promising to pay the taxes for the petitioner. Then, as now, all arrears of taxes could be collected at any time, unlike the case in Georgetown where summation must issue before the close of a year for the taxes payable therein to be collectable.

The New Amsterdam Town Council Ordinance forbids any member or officer of the Council from appraising the property in the town for assessment purposes, but in the days when the Board of Superintendence was in existence, two of its members, associated with a master carpenter, undertook the work of appraisement. At times, too, certain members were appointed to report on the arrears of taxes. Seldom it was—and this even to within recent years—that the aid of the marshal was called in, the plea, genuine or otherwise, of poverty being too much

for the heart of the Receiver of Taxes. There was a practice, too, of this official taking the taxes in piecemeal, receipts being given off when the full sum was gathered in. This was extremely convenient to the contributor who found out before long that so long as this kind of business went on, it was awkward for the taxgatherer to sue him. Rate-payers, dissatisfied with the appraisement of their properties were not wont apparently to appeal in the form in vogue to-day, but "complained," and we find in the minutes such an entry as this:—"the members assembled at 8 a.m. and went carefully over the last appraisements of Queenstown and Smythtown and reduced the valuation of several properties which they considered highly valued." For a long number of years the assessment was only 1 per cent. A unique circumstance falls to be recorded in regard to the rates. It appears that after the market was established in 1850, there was a large sum of money due, for advances, to the British Guiana Bank. The Board of Superintendence therefore applied to Governor Barkly and the Court of Policy for authority to issue bonds redeemable in 10 years at 6 per cent. interest, for \$20,000. for the purpose of paying off a debt incurred by the Board of Police in erecting the market, and of repairing the streets and drainage and for the general improvement of the town. This was granted by Ordinance 12 of 1850. After paying off the debts, the Board found itself in possession of a surplus which it invested at 4 per cent. interest, and for four years the town works were carried on without any taxes being levied. *O tempora, o mores!*

So soon as the Board ventured upon putting up the Water Works at Lochaber, the rates went up; and as time went on and the sweets of borrowing were tasted, the rates were further increased, until to-day the impost is $2\frac{1}{2}$ per cent., an impost that should have been levied long ago—that is, so soon as it became apparent that deficits could not be avoided in the ordinary transactions of the year. In this there was more heart than head; and so disinclined were both the Board and Council to ask the ratepayer for more, that budgeting became perilously near to being a farce. There was a deliberate toying with the figures; and as it was easy, on paper, to make quadrature between anticipated outgoings and anticipated incomings, the puerile game of self-deception went on. Unfortunately, it was aided by the long-suffering of the local traders who gave too much credit. Apparently the Board thought it honoured a trader when it gave him an order, and did not vex its soul with the thought that the debt created had to be paid or should be paid in a reasonable time. Traders sending in their accounts twelve months overdue were thought to be importunate and were met with the haughty response:—"To stand over, to be paid with others when the Board are in funds." Splendid paupers, to be sure! The financial position of the Council would have been healthier if the opportunities were fewer for it to dull the edge of husbandry or to take Ossianic flights in its enterprises. Also, if it had been guided by that prudence which dictates that no obligation should be created without there being a reasonable probability of its being met in a reasonable time. The idea all along seems to

have been that there would be a muddling through somehow—by the fortuitous appearance of a *Deus ex machina*, that the sight of a Municipality in debt would always provoke the sympathy of both gods and men. Supervision of expenditure was lax in the extreme. For a long number of years it was the custom to have the Estimates framed by the Secretary and submitted to the President who signed it, and had it forwarded to the Government, no opportunity being given to the Board to exercise any kind of check whatever. When Mr. John Downer joined the Board in 1891, just before it merged into a Council, he put a stop to this undesirable practice. But he did not put a stop to the belief or understanding that to keep within the estimates of expenditure is an insufferable financial solecism.

Neither the Board nor the Council overpaid its staff—with one or two exceptions in later years. The Town Superintendent and Collector of Taxes got \$125 a month, the Secretary's salary was \$60, that of the Inspector of Nuisances \$30, while the Sexton got less than half what is now paid, viz., \$15. Afterwards an Assistant Town Superintendent was employed at a salary of \$70. About a generation ago the maintenance of all that pertained to the Board was about half what it is to-day, when money has a larger purchasing power. Some items from the 1881 budget are here set out against those for 1914 :—

EXPENDITURE.	
	1881
Roads	\$ 10,000
Bridges	1,100
Lighting	1,100
Drainage	600
Fire Engines	300
Mules, Carts, &c. ...	700
Market	800
Stationery and Printing	600
Water Works	5,000
Burial Ground	1,000
Salaries	6,840
REVENUE.	
Market	6,000
Burial Ground	1,200
Agistment	500
Colonial grant	2,500
Taxes outstanding ..	8,000
Taxes	13,200

New Amsterdam owes its Water Works to the brave and strenuous labours of the Board of Superintendence; and it was an agitated and expectant time it experienced to bring these labours to a successful stage. The Works at their completion were found to have cost \$120,000. It appears that in the 'thirties a canal was dug from the Calabash Creek through the Savannah to the backdams of Plus. Loebaber, Vryheid and

Overwinning: and a water wheel and engine were erected in the Calabash Creek to pump water for the supply of these estates in the dry season. The wheel was a Persian wheel, and the engine was the manufacture of the celebrated James Watt. It was in use for close upon three-quarters of a century, when its owner, the proprietor of Pln. Lochaber, with a dull sense of the historic and the artistic, allowed it to be broken up. He might have got thousands of pounds for it as a mere curio. Both the Board of Police and the Board of Superintendence endeavoured to share in the use of the machinery and the canal for supplying the town reservoirs, but the terms demanded were invariably extravagant. The help of the Government had eventually to be sought. The backdam of Pln. Overwinning abuts on Pln. Vryheid and runs parallel to a similar dam or ketting to the upper side-line of Overwinning where it meets a similar ketting dividing Pln. Providence and the upper lines of Overwinning and Vryheid which lead aback to the open Savannah or ungranted Crown lands for a distance of six miles to the Canje and Calabash creek. Appreciating this, the Board of Superintendence applied to the Government to have a survey made. This done, it asked for a grant of occupancy as follows:—1. About ten acres of land on the bank of the Canje Creek below the Calabash Creek for the erection of machinery for pumping water. 2. For a grant of a strip of land ten rods wide through the Crown Savannah to the ketting between Vryheid and Caraccas. 3. For a grant of that part of the ketting as far as the public road called Philadelphia road. 4. Authority to occupy one of the trenches along the Philadelphia public road on the parapet of the said road to the backdam of the town in order to lay pipes to the fresh water reservoir at the back of the town. Before that time the water supply of the town came from the canal along the backdam (Savannah road) of the town, by the aid of a centrifugal pumping engine and an iron tank forty feet high, with a capacity of 20,000 gallons. The granting of the Board's petition was opposed by the proprietors of Pln. Vryheid, once the property of Wolfert Katz (a godfather of the late Sir H. Katz Davson), and of Pln. Caraccas, a grant of occupancy in respect of which was held by L. Van Batenburg. Replying to the objection lodged on behalf of these parties, the Board pointed out that the Vryheid side-line was none other than the ketting which Katz had bought from the attorney of Van Batenburg. The Board further urged that there was nothing to show that the Crown divested itself of the kettings, "and to suppose that by becoming proprietor of two adjoining parcels of land, the ketting became private property cannot be maintained or proved, the Government never giving up a ketting which is always reserved for ingress and egress and drainage to and from a second depth when granted." In its righteous remonstrance it argued that "were the Government to give up the ketting to any parties simply because they own estates abutting, it would be equivalent to giving up the whole of the interior, there being no other land way, and debarring other applicants from getting a grant." The Board asserted in conclusion that "the opposers are now seeking to

prevent the Board from legally doing what they have done illegally, and from a desire to hold a ketting the monopoly of which cannot benefit them, they seek to deprive five thousand inhabitants of water, grounding their opposition on bare statements without proof as far as your reporters are aware."

In addition to the grant of occupancy the Board had early in 1869 asked the Government for a loan of \$20,000 at 6 per cent. interest, to establish water works on the Lochaber ketting and the digging of a canal from the Calabash Creek, the loan to be repaid in twenty years, payment being secured by a lien on the general revenues of the town, "the first redemption to take place in five years from the date of the bonds." About the same time the question of boring artesian wells was suddenly brought on the carpet. In Demerara at the time was a gentleman named Lloyd who gave it out that he was able and willing to bore wells to a depth of 400 feet where he was sure potable water would be got. In April, 1869, there was a "conversation" between the Board and representatives of Plns. Providence and Smithfield (N. Winter), Friends (R. Green), Everton (J. Barclay), Vryheid (Gibbon) and Lochaber (D. W. Lillie), the object of which was that these parties should join in a scheme for the supply of fresh water from the Calabash Creek. There the pumping machinery was giving out and there was need for more powerful machinery. It was arranged that if the scheme materialised, the town would get its water through "the general trench" and or through the trenches of Plns. Lochaber, Smithfield or Providence, the general expenses to be borne share and share alike, the town paying an equal share in the cleaning of the private trenches through which the water would flow after leaving the general trench. Nothing came of this conference in the nature of an agreement. In May, 1869, the Board petitioned the Combined Court repeating the request made to the Court of Policy for a loan of \$20,000, but adding that the bonds should be guaranteed by the colony. Further the Board extended its demand to \$30,000 as it wanted to make provision for a more extended and continuous supply of pure water than that contemplated in its first petition. It wanted the water either from the Calabash Creek or "by the aid of an artesian well such as is proposed to be sunk experimentally at the risk of the colony for the benefit of the city of Georgetown." In this petition the Board submitted "that the Hand-in-Hand Insurance Company on account of the little provision existing against fire in New Amsterdam have advanced their rate of insurance to the extent of 50 per cent. additional, with which additional premium those of the inhabitants who are now assured therein are burdened until better provision is made, and there is every probability that all prudent companies will follow the example of the local company."

Not long after the Board sent in its petition, it proceeded to order the requisite machinery. By Ordinance 11 of 1869 a loan of \$25,000 was sanctioned. But while it was in a hurry the fates were not propitious. The Government Surveyor, owing partly to a heavy rainfall, was long in

completing his survey and the proprietors of Vryheid carried their opposition to the Government. The Board, chafing under this delay and opposition, commissioned its legal adviser, Mr. N. Atkinson (afterwards a Judge, and now retired) to approach the Government again. Meanwhile (early in 1873) a fire destroyed the premises of Messrs. Hart and Hooton on lot 11, Strand, and this made the Board more anxious to bring its water supply scheme to completion, and "to press for the right of way to the Calabash Creek hitherto denied by the Governor." The Government's sympathy was with the Board or ought to have been, for the Lunatic Asylum and other Government institutions were without an adequate supply of water. The Board was willing to supply this want for a lump sum of \$10,000 and not to ask for an annually recurrent contribution. Eventually, in September, 1873, the grant of occupancy was got from the Government, and in that very month the Board decided to give out the work of digging the canal by tender. This was entrusted to Mr. Henry S. Jones, a brother of Mrs. Katherine Melville of New Amsterdam, and the superintendence to Mr. Thomas Nathan King, father of the present Magistrate of the North West District, for a sum of \$600. Mr. Jones's tender was "for digging of a trench 14 feet wide at the top and 10 feet at the bottom, 4 feet deep (giving a level bottom throughout) and digging 6 foot parapets on both sides of the trench, including clearing the land 36 feet wide, clearing all stumps on parapets and trench, about 2,000 Rhymland roods more or less, at a rate of \$3.64 per rood, and to begin at both ends of the trench and put on sufficient shovelmen to have the work done at a rate to complete the same in nine weeks from the commencement, if the weather permit, and to commence the same by Tuesday, the 23rd September." The work was immediately begun, but a month afterwards Mr. King reported that "in consequence of unexpected difficulties the progress of the canal has been rather slow." Thereupon the Board decided that the size of the canal be reduced from 14 feet "which was considered unnecessarily large," to 8 feet—4 shovels deep and 3 feet parapets. Mr. Jones was instructed to employ a gang of men to perform the work as expeditiously as possible, his commission to be 8 per cent. on the pay-list. The Hand-in-Hand Fire Insurance Company were much interested in the Board's project and even offered to lend it money to proceed with the work, pending the granting of a further loan from the Government. Meanwhile the Vryheid proprietors again obtruded. They demanded that a clause should be inserted in any Ordinance the Court of Policy passed empowering the Board to lay down pipes from Lochaber to New Amsterdam, to the effect that the Board should agree to take over the public road from the ketting between Pns. Lochaber and Vryheid to the town, and to defray for ever the cost of maintaining the said road, reserving to the proprietors of Vryheid in perpetuity the right to make such cuttings through and across such public road as may be necessary for the preservation of the rights of the said proprietors as far as regards drainage and navigation trenches. The proprietors also stated their willingness to sell the right to the road and to have the question of the value settled by arbitration.

In the end the Board agreed to keep up the road. In April of the following year the canal had been completed, a Gwynne's centrifugal pump had been laid down and also a substantial foundation for the erection of an engine and tank, but the Government had not yet made any advance towards the loan. In November, 1874, the Board consented to pay \$2,000 for the right of laying down pipes across Vryheid. By this time the Board had spent nearly \$45,000 on the works, or \$15,000 in excess of the Government loan. The Board memorialised the Court in the course of which it related the opposition it had encountered, and prayed that the necessary Bill should be introduced and passed to allow of the laying down of the pipes along the public road between the ketting on the western boundary of Pln. Lochaber and the town. Owing to these difficulties and the Government having delayed in paying over a further sum of \$10,000 to the Board, which had been granted by the Combined Court in 1874, very little progress was made with the works. In June of the following year a sum of \$4,000 was advanced towards the \$10,000, the balance being promised on the actual completion of the works. When the year 1879 opened the Water Works were not completed but operations had begun. Loans were falling due and the Board was constrained to ask for a further loan of \$30,000. A sum of \$25,000 was lent at 5 per cent. interest and the painting of the works was taken in hand. To-day they consist of a cast iron rectangular tank holding 20,000 gallons, supported by a cast iron and steel structure 45 feet from the ground. The engine house is placed immediately under the tank at its base. The plant consists of one horizontal high pressure Worthington pumping engine, to deliver 300 gallons of water per minute against a pressure of 120 lbs. per square inch; one horizontal triple expansion Worthington pumping engine, to deliver 600 gallons against the same pressure; two Babcock and Wilcox boilers, each 64 h.p., with furnaces for wood fuel and a Cameron feed pump. At the Canje Creek, some five and a half miles to the south, is a twelve inch centrifugal pump and oil engine, delivering 2,000 gallons of water a minute. The canal at the Lochaber or north end is 3 rods wide, tapering down to one rod at the other end.

While efforts were being concentrated on procuring a water supply and concurrently on increasing the efficiency of the Fire Brigade, the progress of both enterprises being followed by a sympathetic interest by the Hand-in-Hand Fire Insurance Company and Mr. Nicholas Cox, the Inspector General of Police, little attention could be paid to the sanitary exigencies of the town. Nor was there an abundance of funds wherewith to do it. The Board, however, was not unmindful of its obligations. Seeking advice, it bespoke the kind offices of two sugar planters, who were commissioned to inspect the town and advise what were the most urgent sanitary measures to be undertaken. One of these experts was Mr. Foster Massiah, who was afterwards overseer of the East Demerara Water Conservancy. The other was Mr. George Welchman, then manager of Pln. Blaimont. This was in July, 1877. These men, who were each paid \$25 for their report, recommended the sinking of the koker at the

north end of the town four feet deeper and to be paled off in front ; and certain trenches and drains to be dug. They expressed the opinion that for many years sufficient labour had not been employed in keeping the roads and drainage in good order. This was but true, for there had been a dearth of labour, and at one time something like a strike, inasmuch that the Board had to ask the Government's permission to employ prison labour. The cost of doing the work recommended by the Commissioners was put down at \$3,000. The Board at once proceeded to seek the aid of the Government to assist it in the work, and asked that the yearly grant of \$2,500 (in lieu of licences) be paid in advance. At the same time there was a reorganisation of the Board's staff, this including the appointment of an Assistant Town Superintendent. The Government declined to advance the annual grant, but suggested that it could be paid over as a loan, repayable by a special rate to be levied by the Board. The assessment rate at this time was $1\frac{1}{2}$ per cent. The Board, demurring at the Government's proposal, asked that the \$10,000, which had been paid over for a water supply for all time should be charged against it as a loan "on the usual terms," and that the Government should give an annual grant of \$2,500, for the water supplied to the public institutions, or one-half what was being paid the Georgetown Municipality for a similar service. This request was eventually granted, thanks to the good offices of Mr. (afterwards Sir) Henry Katz Davson, at that time President of the Board. He helped the Board considerably during his long connection with it by his energy, influence and practical advice. All that pertained to the welfare of the town engaged his active interest. Undoubtedly he was the guiding force of the Board, proving eminently serviceable in many decisive moments. We have not looked upon his like since, and townsmen should keep his name in a spirit of loyal affection and remembrance.

Before the Water Works were completed, the Board was reaching out towards more power as a corporation. Its greatness had ripened, and it came to pass that it mellowed into a Town Council. The statute that created it seemed in need of structural alteration and repair, and the members proceeded from time to time to frame amendments. This done, a draft Bill was sent on to the Attorney General, who suggested certain alterations and further amendments. Eventually, Ordinance 8 of 1891 was passed and, His Majesty the King, not exercising his powers of disallowance (this phrase was not then in vogue), it became the law of the land, and the Mayor and Town Council of New Amsterdam were duly constituted and ushered into being. The Board had itself changed the mould within which it hoped its usefulness would be extended. Before long time it was found that this Ordinance was not comprehensive enough, and for the past seven years the Council has been at the work of amending, sending in last year the draft of a Bill praying the Government for legislative sanction to be given to it. It is remarkable that among the functions the Council was to assume and perform that of lighting the town is not included. The town is being lit by electricity by virtue of an Order-in-Council granted by the Executive Council and not

by express statute. Again, there is nothing in the Ordinance inhibiting any of the Council's servants from becoming Councillors, and indeed one of them has been. It makes no provision for a Mayor's vote, but such an appropriation has for years been made. Nor is provision made for pensions and gratuities. The first Councillors, all members of the Board, were Messrs. N. R. McKinnon (the first Mayor), John Downer, C. P. Gaskin, I. E. A. Patoir, Henry Rynveldt, M. de Mendonca, Jr., and Bruce Harvey Stephens.

The inauguration of the Council took place on the 1st September, 1891, when Sir Charles Bruce, who was then administering the Government, came up to New Amsterdam to assist thereat. He was presented with an address by the Council. In the course of his gracious reply thereto, Sir Charles Bruce, referring to the reform of the political constitution which took place in that very year, gave it as his opinion, that that reform could not fail to have an important bearing on the Municipal institutions. "The urban constituencies will almost certainly look to the Municipal bodies for candidates who have given proof of an intelligent interest in public affairs, and candidates for seats in the Legislature will naturally avail themselves of Municipal seats as stepping-stones to the Court of Policy and Combined Court. In this way it may reasonably be expected that the services of the best men will be secured for our Municipal Corporations, and it will be of every advantage that future representative members of the Legislature should enter upon their duties with a previously acquired knowledge and experience of the administration of public business." It came to pass that as many as five of the seven Councillors whom Sir Charles was then addressing afterwards became members of the Combined Court, and two of them of the Court of Policy.

The new Council began its labours with becoming enthusiasm, and at first confined them strictly to the ordinary duties of a Municipality. The Water Works were improved, the efficiency of the Fire Brigade increased, the roads attended to, a grant of occupancy obtained of Pln. Vryman's Erven on the east of the town. The Board of Superintendence had had in contemplation the lighting of the town with electricity. A scheme was also on the anvil to run a tramway around the town and then on to the Corentyne. With all the forward precipitancy of youth, the Council worked away at this tragic stroke of enterprise. There came a day—ten years after the inauguration of the Council—when the Electricity Works were established. The plant now consists of a 100 h.p. horizontal tandem condensing engine, belted to a 60 k.k. alternating current generator, delivering electricity at a pressure of 2,000 volts; two horizontal jet condensing plants by Messrs. Tangye and the Worthington Pumping Company, respectively; one 150 h.p. vertical Cahall boiler with two Weir feed pumps; a switchboard with the usual instruments and an exciter driven off the tail shaft of the generator. The second unit consists of a 125 h.p. wood gas generating apparatus by the Power Gas Corporation of Stockton-on-Tees; and a 125 horizontal gas engine by Messrs. W. J.

Bates & Company of Manchester. The Electricity Works, for a variety of reasons not connected with the present management, have proved a stone of stumbling to the feet of the Municipality. They are the Achilles heel of the municipal organism, and up to now their exigencies have retarded the usefulness of the Council as a purely municipal agency. It may be that it would have been more prudent for the Council to have stuck to oil lamps, if only for the reason that Aulus Gellius bought his books—because they were cheap. *Per contra*, New Amsterdam is the best lit town in the West Indies, and its Municipality the only one that furnishes its own electric light.

WEST INDIAN LAW AND APPEALS.

BY JOSEPH J. NUNAN, LL.D., Attorney General.

A good deal of water has passed under the mill since I addressed the readers of *Timehri* on this subject in the number for July, 1912. The Commission on the Roman-Dutch law of the colony has met, heard evidence at great length and has presented its report. It has recommended the substitution of the English for the Roman-Dutch Common Law while deprecating the introduction of the complexities of English Real Property, for avoiding which it makes provision. It embodies its recommendations in the form of a short Code. This piece of draft legislation will have the opportunity of standing criticism for some eight or nine months before it is likely to become law. During that time valuable suggestions to amend or to supplement it should be forthcoming. In fact, as its draftsman I shall gladly welcome any assistance from any quarter which will secure the improvement of this vital part of the recommendations and the introduction of this unrecanted alteration of system without friction. Meanwhile the proposals of the Commission have received the unanimous support of the Colonial press and so far not a voice has been raised in defence of the chaotic jumble of English and Roman-Dutch law which after one hundred and eleven years from the Capitulation is all that is left of the Common law of the United Colony of Demerara and Essequibo and of the Colony of Berbice.

The result of the substitution of English for Roman-Dutch law in the colony will no doubt favour the establishment of a common Court of Appeal for British Guiana and the West Indies, or at least for British Guiana and that part of the West Indies lying to the east of Jamaica. Throughout that area the law and procedure will by the end of the year be virtually the same except where the law has been codified. In Jamaica Spanish law existed at the time of its capture in 1655, but the Spanish population was small and rapidly vanished before the influx of English colonization. No trace of Spanish law survived the 17th century. In 1901 Sir Courtenay Ilbert in *Legislative Methods and Forms* correctly referred to St. Vincent as having been formerly governed by the *Coûtume de Paris*, but added that while most traces of French law have disappeared from the island "it is said that some old French *arrêts* are still in force." The Common Law Commissioners made inquiry of the Administration of St. Vincent through the proper official channel and were informed that this is no longer correct, that the Common law is entirely English and that the Criminal law is an adaptation of our own Indictable Offences Ordinance, 1893. In St. Lucia the old *Coûtume de Paris* made a stouter fight for existence and would probably have survived in that island in very much the same form as in Quebec but for the zeal for codification. With the advent of Mr. Armstrong, a Canadian lawyer, as Chief Justice, a Civil Code based on the law of Upper Canada replaced the obsolescent customary law and procedure in 1879 during

the administration of Sir William des Vœux. The Criminal Law and Procedure followed the English models.

The history of the law of Trinidad is much less simple. When the island was captured in 1797 it had a considerable Spanish population with a full equipment of laws and courts of justice. Of this a most interesting account is given by Mr. C. Reis in the "Journal of Comparative Legislation" for January, 1914. A review of the present position by Mr. Gollan, the learned Attorney General for Trinidad, is published in an appendix to the Common Law Commissioners' Report. Although the Spanish law of Trinidad was not specially stipulated for by the Treaty of Capitulation, it was conceded by the British authorities in a subsequent circular and undoubtedly remained the law of the colony for at least half a century. In 1844 the English Common law in criminal cases and in 1848 the English civil procedure were introduced. The Ordinance of 1848 appears to have given rise to a singular misconception of its purport. It is merely a procedure Ordinance, but has been frequently taken to imply the wholesale introduction of English common and statute law into Trinidad. It would appear that subsequent to this date Spanish law has been altogether ignored. However defective the statutory basis of the change, Spanish law has been completely supplanted in practice owing to the activity of the Legislature in introducing English statutes and to the unimpeded influence of the Judge-made law of Courts acquainted only with English law and procedure. Unlike the case of British Guiana there is neither duality of system nor fusion. As Mr. Reis points out, the Spanish law has been wholly displaced except as to a few matters previous to 1846. These govern the construction of deeds and the disposition of property by will before 1844, the forms of wills before 1845, the institution of the heir, succession, intestacy, and the rights of illegitimates as next of kin of their mother before 1846. Needless to say, they seldom interrupt the current of English jurisprudence as administered by the Trinidad Courts. Mr. Gollan is clearly right in thinking that it will be advisable to consider the introduction of a statute removing Trinidad from the somewhat anomalous position of being a colony without any common law except one which dropped out of public recollection nearly three-quarters of a century ago but which has never been specifically abolished. If this is done in the near future British Guiana and Trinidad will start their careers as colonies under the English Common law almost on a footing of equality.*

The idea of a West Indian Appeal Court is not a new one and has had many vicissitudes. One of the chief obstacles to its realization until a few years ago was the reluctance of one of the most respected of the Chief Justices in these colonies to face the supposed dangers and the very real inconveniences of travelling by intercolonial steamers. The inconveniences no longer exist, as the present steamers are clean and

*NOTE.—Since the above was written Trinidad has taken steps to deal with this situation and is also amending its Indicative Ordinance to enable appeals to be heard by two independent Judges on the lines of the new British Guiana Supreme Court Bill. The two colonies are therefore moving on similar lines in these matters.

commodious, and the dangers are no longer likely to prove a deterrent. The scheme was again mooted in *Timehri* in July, 1912, after many years' quiescence, in the following form:

"The West Indian Appeal Court will be created when any person in authority works out a reasonable financial scheme, while meeting the local requirements of Trinidad and Jamaica, the most important of the communities from a litigious standpoint, for the rapid disposal of their own numerous appeals. Permanent headquarters in Trinidad with half-yearly sessions in the other colonies and a single additional Appeal Judge, the various Chief Justices and Acting Chief Justices sitting by rota, would meet the case. One of the three British Guiana Judgeships could be dispensed with and other savings effected elsewhere. No additional expense would be incurred. It may be necessary to leave Jamaica out of count at the outset until the success of a less ambitious scheme is assured. But if the duty of beginning a study of Roman-Dutch law to meet the requirements of British Guiana is added to the other duties which the scheme will eventually entail upon Judges even now underpaid and in Trinidad by no means under-worked, the realization will be indefinitely postponed."

Since this was written a Supreme Court Bill has been read a first time which will permit of one of the British Guiana Judges being dispensed with if necessary as soon as any Appeal Court is created. In the interval it will enable local appeals to be heard by two independent Judges, as in the case of a Divisional Court in England. The anomalous practice of the Judge appealed from sitting on the bench in appeals from himself is to be abolished. If the two Judges disagree the judgment of the Court below will stand except as to such portion as they may agree to set aside. We still require, however, some accessible and inexpensive intermediate tribunal between the Supreme Court of the Colony and the Judicial Committee of the Privy Council. The subsequent right of appeal to the Privy Council should of course be preserved, but West Indian issues are seldom of sufficient gravity to justify recourse to that great tribunal of the Empire. This can only be found in an Appeal Court for the West Indies. An attempt to find a line of least resistance and set up a half-way system by securing co-operation between this colony and Trinidad has been, as I anticipated, unsuccessful. The proposal was that the two colonies should lend each other a Judge or Judges from time to time to secure an independent hearing of appeals. The Trinidad Judges, however, are kept very busy at their local work and without extra remuneration would have to embark upon the laborious study of an entirely different form of jurisprudence to enable them to try occasional cases in British Guiana. Barbados has only a single Judge of Supreme Court standing and the same reply might be expected from that colony. The possibilities of a more elaborate scheme are therefore to be considered, and the Barbados Legislature has recently petitioned the King in Council in regard to its own appeal requirements. The time is ripe for a practical move. The late Chief Justice of British Guiana (Sir T. C. Rayner) has expressed himself in favour of a larger scheme, and we are in substantial agreement

as to the lines on which such a Court can be economically and efficiently formed. A conference of West Indian Chief Justices and Attorney Generals should be first convened at the suggestion or request of the Colonial Office to secure the full consideration of all local requirements. Proposals have been sent from this colony on the subject. The Barbados scheme leaves out altogether the Leeward Islands and Jamaica, but the Chief Justice of Grenada is suggested as a member of the Court of Appeal. Jamaica may insist upon her supposed separate interests and comparative isolation, but a West Indian Appeal Court should certainly include the Leeward Islands.

The proposal which I personally advocate is that an Appeal Court be formed consisting in the first instance of the Chief Justices and Acting Chief Justices of Trinidad, British Guiana and Barbados and of an additional special Appeal Judge who would preside at all sittings of the Court. As an alternative the senior Judge present might preside. The Colonial Office might consider the advisability of including the Chief Justice of the Leewards Islands. I am not in favour of the inclusion of the Chief Justice of any other island. The headquarters should be in Trinidad, but two sessions per annum should be held in British Guiana, Barbados, Grenada and Antigua. If Jamaica acceded to the scheme its Chief Justice and Acting Chief Justice would be included, but the headquarters should still be Trinidad as the most central and accessible point. Three Judges would form a quorum, but no Judge should sit on appeals from himself. For instance, if the Court were sitting in British Guiana the special Appeal Judge and one other Chief Justice with the local Chief Justice would form the Court if there were no appeal from the local Chief Justice. If there were, a second Chief Justice from outside the colony would have to come to hear that particular appeal. In the intervals of circuit sessions appeals would be heard at any time in Trinidad. The expense of a separate machinery for a West Indian Court of Appeal would be avoided by adopting the suggested scheme.

In the new Supreme Court Bill it is proposed to abolish the limited jurisdiction and to enable the colony to dispense with a third Judge in case suitable provision for appeals is made. We should thereby effect a saving of £1,000 salary plus the cost of some clerical assistance which might be set down at £250. As against this would be set off our contribution to the salary of the special Appeal Judge and perhaps to an increase of some £200 in the salary of the Registrar of the headquarters colony, who would, in addition to his own ordinary duties, act as Registrar of the Appeal Court. The salary of the Appeal Judge might be estimated at £1,600, the present salary of the Chief Justice of Trinidad and Jamaica. Our share of the whole might be placed at £550. Allowing £50 for travelling expenses our own net saving would be about £650. A mere saving, however, should be reckoned as a small matter compared with the increased convenience to the colony and to the West Indies by insuring a rapid and economic hearing of appeals by an independent tribunal. The important political effect of taking a further step towards West Indian consolidation cannot be ignored.

CHARLES WATERTON IN DEMERARA.

BY JAMES RODWAY.

In studying the past history of the colony we are struck with the number of strong personalities to be found among the early pioneers. Possibly their isolation was largely responsible for their eccentricities, for now that men come more in contact with each other their angles are more likely to be rubbed down. Whatever may be said against faddists it is certain that people are interesting from their differences and because they are true to their real characters. On the contrary, those who follow custom and fashion either have no real personality or what they have is hidden by the demands of custom. A century ago the fetters of conventionality hardly troubled the Demerara pioneer and we therefore find many interesting characters, in fact everyone was himself rather than a reflection of others. Hence, no doubt, we feel a greater interest in old travellers' stories because they contain so much of the personality of the writers.

This characteristic is obvious in Waterton's "Wanderings" and has undoubtedly conduced to put it in the position of one of the world's best books. Everyone who reads it feels that he can sympathise with the writer and enjoy with him the "pleasure of the pathless woods."

To the man in Society Charles Waterton was a faddist, an eccentric who isolated himself in his Yorkshire home, kept no company, and never took part in the sports of the county. Even in Demerara he was looked upon by some of the rollicking boys of that age as not quite right in his head. For, first of all, he was a teetotaler when custom never excused a man from having a drink. We may also safely state that he would be out of place among the cock-fighting and card-playing gamblers, as well as those votaries of Venus then prominent in Georgetown. As far as can be gathered he spent little time in Stabroek, but was busy at first at La Jalousie and Fellowship managing the estates, and, in his spare time, studying the curri-curris and gauldings on the mud-flats.

He was not, however, wanting in friends, for although his uncle Christopher was away with his family, there were his aunt Mrs. M. Daly at Bellevue and John Daly at Schoon Ord. But, like many other grand personalities, he cared little for general company, for he had one real friend in Charles Edmonstone.

The story of Mrs. Daly is almost romantic. She was remarkably handsome. One day when walking in the streets of Wakefield she was seen by Mr. Michael Daly who was on a visit to the old country. It was a case of love at first sight, and although the Waterton family objected to her going to such an out-of-the-way place as Demerara love prevailed and Miss Waterton became Mrs. Daly of Bellevue. On the fact of this

accidental meeting depended Charles Waterton's visits to the colony and the publication of the "Wanderings." The first result of the marriage was, however, the departure from England of Christopher Waterton.

Demerara was not then so healthy as it is now, for the empoldering of the coastlands generally caused much sickness. It followed that many a planter died, some of whom left widows who tried to carry on the estates. Among these widows was Mrs. Anne Waddell, whose first husband had been Edward Birmingham, a well-known planter, and her second Dr. John Waddell. She owned the plantations La Jalousie and Fellowship. Christopher Waterton probably met her at one of the houses of the Dalys, with the result that they were married and he carried on the plantations. We may suppose that the widow was by no means an old woman notwithstanding her two previous marriages, for she bore five children to her third husband. These were Robert, who lived here and died in 1837, George, an officer in the Austrian service, Henry, Matilda and Agnes.

To act as g.g. or attorney for his uncle Charles Waterton came out in 1805. While in that capacity he got a fair knowledge of the colony and was able to indulge his taste for the study of birds. We may consider that he was in a way a born naturalist, only wanting opportunities for developing his faculty. These he got in Demerara, with the result that his whole after-life was devoted to a grand scheme by which a bird paradise was established at Walton Hall.

To study the birds of the interior was his aim, but he could not do this properly as long as he managed the estates. However, he became acquainted with the greatest friend of his life, Charles Edmonstone, the mighty hunter of runaway slaves.

Charles Edmonstone came from an old Scotch family which numbered among its ancestors Princesses of the Royal blood of Scotland and even the mythical Lady Godiva of Coventry. He came to the colony about 1781, probably during the short British occupation. The old Scottish estates had been lost and we may suppose that he was, like many other young fellows, in search of a fortune. When we say that he went back and bought Cardross Park, an old family possession in Dumbartonshire, we may assume that he was successful.

At that time there lived up the Camouni Creek another Scotchman named William Reid. Like many colonists of that time he found it desirable to be on friendly terms with the Arawaks in his neighbourhood. The result was that he married the daughter of one of the Captains or "Owls," who was called Princess Minda; her daughter became Mrs. Edmonstone.

Some people may be inclined to sneer at the idea of an "Indian Princess," and even a century ago the more conventional settlers looked upon an Indian marriage with contempt. Such a view is shown by

the following reference to a son of Governor Meertens, from a MS. of 1811:—

“Know then that these Chiefs are very formidable in their own opinion, and that the elegant mamma of Jacco Meertens was no less a personage than the Empress of the vast Madawiny Empire, with seven buck huts and nine naked families. This Empress, his republican Excellency was so much enamoured with that a formal proposal of marriage was made and accepted. Strange as it is true, that nothing made so great an impression on the heart of this enraptured swain than the graceful accomplishment of swimming in the delightful Indian streams (so like a large turtle) which his inamorata usually enjoyed with all her nation in undisturbed felicity, so customary in her desultory peregrinations through the wilds of the continent.”

When an officer of the Government like Antony Meertens could put an Indian Princess into his mansion at Pln. Rome as mistress, and keep up what was then Government House as a fashionable centre, we need not formulate excuses for William Reid. We can easily understand that the wife of a pioneer could hardly be a fine lady; this “Princess,” no doubt, possessed excellent qualities to be admired.

There is little known about Reid, but from the position of his grant we may presume that he was a timber-cutter. In such a business it was of great advantage to have Indian assistance and we may safely state that this was often given freely by friends of the Chief, his father-in-law. If we presume that Edmonstone saved enough from the same business to buy Cardross Park it must have paid very well. The fact that Stabroek was then being built and the other fact that the houses required good timber, suggest that the trade was a good one and in few hands. Possibly there may yet be one or two houses which have timbers cut by the relations of Princess Minda.

Edmonstone got a grant near to that of Reid and we may suggest that they worked together. There is reason for stating that Edmonstone married Reid's daughter a few years after his arrival, but whether the two were partners or whether the younger man was assistant at first does not appear. We may presume, however, that they were friendly from the first and it is even stated that they came from the same place in Scotland. When William Reid died we may also presume that the timber business and savings came into the hands of his son-in-law.

Our records commence with Dr. Pinekard's visit to Warrow's Place, which he describes. The dwelling was plain but comfortable, and the hospitality of Edmonstone shone conspicuously: the dinner comprised, among other good things, a ham, pepper-pot and labba. This was in 1796 and the Doctor stated that he saw the old Swedenborgian, Glen, teaching Edmonstone's children to read. Possibly these children may have died young, for even the oldest of those taken to England in 1817 was hardly old enough to have been learning her letters 21 years before. The second daughter was born in 1812 and it is probable that Miss Edmonstone was not much older.

From his influence with the Indians Edmonstone was able to assist the Government in preventing the danger of camps of runaway slaves. As a result of precautionary measures these never became so dangerous here as in Surinam, and this is largely due to Edmonstone, who at different times led fifteen expeditions into the bush with uniform success, but not without danger. In 1801 he nearly lost his life in an expedition to the district now occupied by the reservoir for the Lamaha Canal.

With eleven men, a corporal and sergeant, as well as a party of Indians, he proceeded up the Madawini Creek. After eight days travelling over the sand-reefs and through the swamps, they came upon a hill where was a large body of runaway negroes. Edmonstone, with his man, Coffee, was well ahead with two Indian Chiefs, one of whom fired at a negro. On this the leader, a burly man about 6ft. high, with a head-dress of cowrie shells, came out and challenged him. Edmonstone advanced slowly to allow his party time to come up, but as the runaway was defiant he shot him. Immediately the enemy fired a volley, with the result that the two Indians and Edmonstone fell, while the bush negroes ran off. One of the Indian Chiefs lay down close to Edmonstone, who asked him if he was much hurt. "Oh no," he replied and at once expired. Finding their leader severely wounded the party refused to pursue the runaways and at once prepared to carry Edmonstone to the nearest plantation. This was Alliance, and from thence they crossed the river to Vredestein where Dr. Dunkin, the Colonial Surgeon, attended him. Four slugs were located but only one could be extracted then: in Glasgow a second was removed many years later, but the remaining two gave trouble as long as he lived.

For this and other exploits he was presented with a gold-hilted sword, a silver cup, freedom from taxes, and a fine grant for timber cutting.

When Charles Waterton became acquainted with his friend does not appear, but we may take the account of Warrow's Place as given by St. Clair in his "Residence in the West Indies" and referring to 1807 as probably near to what the settlement was like when Waterton paid his first visits. A copy of St. Clair's sketch was reproduced in a late number of *Timehri* (Vol. 2, No. 2). The house stood on a sloping rise from the savannah-like expansion of the creek and behind were the ridges of sand which are so common in that neighbourhood. No doubt these sand-reefs were at one time covered with immense trees which formed the good sound timber for which some of our old buildings were noted. Wild animals were more common than they are at present, but even yet the locality is not far from its primitive condition. Birds were and are numerous; it is an ideal place for the naturalist.

Waterton tells how Warrow's Place sometimes became a refuge for people who got into trouble. In one case an unfortunate gentleman was outlawed in connection with a bill transaction. He had been wandering about, and being sick looked up Waterton, who was expected to act as

a surgeon by bleeding him. While they were at breakfast a tent-boat appeared, whereupon Waterton went down to the landing and disputed the passage of the officers of justice, who were in search of the outlaw, and thus gave time for him to escape. For this Waterton was summoned before Governor Carmichael, to whom he made a very plausible excuse.

The Governor was then clearing out the Augean Stables, otherwise public offices. He would tell an official that he was coming round next day, which sometimes gave him a fright. In one case the official was well aware that he could not make out a just balance sheet and said he would die rather than take a false oath. He therefore got away to Edmonstone's, from whence he appears to have fled to the interior with a view to reach the Spanish or Portuguese territory.

It was in 1812 when Governor Carmichael made such a stir, and in the same year Anne Mary Edmonstone was born at Warrow's Place. She was spoken of later as the second daughter; the others were Eliza and Helen. It is stated that Charles Waterton liked her as a child and it is probable that he may have witnessed her christening and held her in his arms. As however this was the time when he commenced his first journey as told in the "Wanderings" he could have seen little of his future bride before his return. In that journey he reached Fort St. Joaquim, but suffered so much from fever that he almost despaired of ever coming back. "However, it abated; his spirits rallied, and he marched again; and after delays and inconveniences he reached the house of his worthy friend, Mr. Edmonstone."

Waterton left Demerara soon afterwards, and returned in 1816. The following year Charles Edmonstone retired to Scotland with his wife and three daughters, where he bought Cardross Park and settled down. Both he and his wife, however, died within a few years, leaving the girls, who were then at Bruges for their education, in charge of his friend.

Waterton came again to Demerara in 1820 on the "Glenbervie," a famous barque, with a captain of sufficient note to be mentioned in the Scotch jest-book. "The Laird of Logan."

Captain John Jones sailed the "Glenbervie" from Greenock to Demerara for nearly twenty years and wore out more canvas than any other two vessels of the same burthen. While other commanders were reefing in prospect of gales Jones kept up his sails to prove the strength of their fabric. "Come away, my lads," he would cry. "it is as well to go to the bottom at twelve knots as at eight."

It is said that he once took two young fellows for Demerara where they expected to do well as overseers. But the weather was so rough and the winds so contrary that the passengers soon felt disgusted with the sea. Before they were well on the voyage one of them said:

"I say Captain, are we at Madeira yet? Because, ye see, we want to be pitten out there, and we'll gang the rest o't every fit."

Later on when they were less buffeted, they disputed together as to the best way of getting back without going through a similar experience. One was for walking from Demerara up to Canada and then crossing on foot, but the other thought this too long a journey :

“Demerara’s an island on the Continent, and we hae naething more to do than just to step our wa’s down through Spain and France and Portugal through the back o’ Ireland.”

A similar stormy experience befell Waterton, for the “Glenbervic” was driven to the north-west of Ireland and had to contend with a foul and wintry wind for above a fortnight. We may presume that Captain Jones, as usual, carried everything she would bear.

On his arrival in Georgetown Waterton found that yellow fever had been claiming its victims and that funerals were taking place every day. Under such circumstances he remained only as long as was necessary to get together his supplies for his third journey. He paid a visit to Warrow’s Place, but, although it had been deserted for only three years, the house was in ruins, the roof had nearly fallen in, and the room where once Governors and Generals had caroused was now dismantled and tenanted by the vampire. On the outside nature had nearly resumed her rights, the few fruit-trees were struggling like strangers lost and bewildered. However, he fixed his quarters here for a time and did some good work.

The reason for this desertion of Warrow’s Place was probably the new timber grant which was made to Robert Edmonstone in the Hobabo in consideration for his keeping the head of that creek free from bush negroes. Probably also Waterton brought out some authority in connection with Charles Edmonstone’s affairs for we find a notice in the “Royal Gazette,” July 7, 1820, that the firm of Charles Edmonstone & Co. was closing in a few months; all claims to be sent to the counting-house of McDonald, Edmonstone & Co. This last seems to have been a new firm, for that then closing consisted of Archibald and Charles Edmonstone and William Smith. On the 2nd August there was an advertisement of Archibald and Robert Edmonstone, attorneys of Charles Edmonstone, offering for hire a wood-cutting gang of 15 men, women and children as hired by William Smith.

Waterton paid a visit to the house of Archibald in the Hobabo with President Rough, the President of the Court of Justice, who had the dispute with Governor Murray. Here Waterton came to breakfast bare-foot and in a check shirt, for which he apologised. Here also he killed a big snake with the help of the Edmonstones and the President. Archibald Edmonstone, he said, had a good knowledge of the forest and could tell him of the fruit-bearing trees frequented by certain birds: he also knew seventy kinds of timber and had made a list.

Charles Waterton was a man of strong opinions, some of which were considered as fads. People laughed at him even in Georgetown, especially

when he brought the Nondescript for exhibition and gave the story of its capture. He cared nothing for their jeers, for he undoubtedly was right in his contention that his system of preparing specimens was an advance on everything that had gone before. His treatment of fever by bleeding was perhaps risky, especially as he always did it himself. If, however, we may judge by results nothing happened to prevent his living to a good old age. His doses of calomel, jalap and Peruvian bark were in accordance with the custom of his time. There can hardly be a doubt that his loose clothing and bare feet helped to prevent trouble; a splinter in one foot showed, however, that there was a risk. Still the difficulties of keeping boots or shoes in good and serviceable condition on a journey are so great that it was probably the best thing he could do. His total abstinence from spirits was very important, especially when we consider the habits of the time. We cannot doubt for one moment that many of the pioneers died from excessive drinking; Dr. Bonyun showed this plainly, by statistics, in the 'forties

It is not necessary to survey Waterton's grand work in Demerara; its value has been acknowledged by naturalists all over the world and Sir Robert Schomburgk was indebted to the account of his travels for many a wrinkle. He was not very kindly treated by the reviews, but he could afford to laugh when they dubbed him another Munchausen.

Waterton left Demerara in 1825 never to return, and four years later he married Anne Mary Edmonstone, a girl of seventeen. We cannot do better than quote his statement of the result from the Autobiography:—

“In 1829 I became the happiest man in the world; but it pleased Heaven to convince me that all felicity here below is no more than a mere illusive transitory dream, and I bow submissive to its adorable decrees. I am left with one fine little boy who looks up to me for light; and I trust that I shall succeed in imparting it to him; for my sister, Mrs. Carr, and her invaluable husband, together with his aunts, Miss Edmonstone and Miss Helen Edmonstone, know no bounds in their affection for him, and in their good offices to myself, who stand so much in need of them.”

The man of forty-eight was married to the school-girl at Bruges. Both father and mother were dead and the three Demerara girls were under Waterton's care. Poor Anne died soon after the birth of Edmund, but her sisters, who remained single, acted as mothers to the child. There was always much good feeling towards his dear Eliza and Helen, and the few letters to them which have been published express the genial character of the naturalist. We wonder whether they ever longed to be back in the old home and among their Indian friends.

The timber grant in the Hobabo appears to have fallen into the hands of Dr Hugh Rodie, whose name is commemorated in the name of the greenheart, and who suggested the bark of that tree as a fever specific. The whole of the area once covered by the grant is now occupied by the Canals Polder and the Hobabo is practically gone. Forty years

ago we were able to distinguish the remains of a saw-mill and the site of a house where probably the Edmonstones and Dr. Rodie once lived.

The plantation named Walton Hall, near Devonshire Castle in Essequebo, must have been sold about the time that Charles Waterton gave up his attorneyship in 1812. Mr. J. McKirdy was the owner in 1815, when it was in cotton; in 1822 B. Kingston was put down as proprietor, and in 1825 there were 259 slaves. In 1841 it was a sugar plantation and the produce was recorded as 190,000 lbs. sugar, 2,682 gallons rum and 18,871 gallons molasses; later it was amalgamated with Devonshire Castle, and is now included in Hampton Court.

The estates of Christopher Waterton in 1815 were Fellowship, in coffee, and Bienfait and Jalousie, in coffee and cotton. In 1822 the estates were registered under the name of John Waddell, executor; there were in 1825, 593 slaves on Fellowship and 313 on La Jalousie. In 1833 La Jalousie was in sugar and cotton, and Fellowship in cotton and plantains: they were recorded as the property of the heirs of Waterton, with Robert Waterton as attorney. In 1841 they were linked together and the produce was recorded as sugar 499,650 lbs., rum 2,745 gallons; molasses 29,787 gallons; coffee 15,000 lbs., and plantains, etc., value \$4,243.17. Robert Waterton, the last representative of the family in Demerara, died in 1837, and we find La Jalousie in 1861 as the property of the heirs of Waterton with R. G. Butts as attorney and D. C. Cameron, manager. In 1870 the estate is put down as the property of G. J. Luckie with E. A. Searle as manager. It was amalgamated with Windsor Forest and has been lately abandoned to the Government on account of the difficulties of keeping up sea defences.

Charles Edmonstone received, among other marks of appreciation for his services, a grant of a mud lot for his timber trade in what is now Georgetown. Stabroek had no room for such a purpose; it followed, therefore, that most of the timber trade was carried on in front of *Pl. Werk-en-Rust*, as it is to-day. The only available places belonging to the Government were the Company's paths, the most convenient for the rising districts of Robb's Town and Cumingsburg being that between Vlissingen and La Bourgade, on which the buildings of the R.A. & C. Society now stand.

On the 18th of April, 1806, Governor Montgomerie granted him a piece of land (mud lot) which is represented to-day by the premises occupied by Messrs. Sandbach, Parker & Co. This was transported in 1820, by Robert and Archibald Edmonstone, as attorneys of Charles, to Rose, Croal and Spragg, since which time it has been owned and occupied successively by Jones, Parry and Machray, Donovan, and Perot & Co. In 1826 I find McDonald, Edmonstone & Co. occupying a lot which is probably the site on which Fogarty's boot store now stands. Both of these mud lots were for storing timber, which was probably required in considerable quantities for building the new district of Cumingsburg.

It may be well to mention here that Water Street is a made-up road, which originated in an ordinary mud dam, such as we have now in front of Ruimveldt. It was so slushy in wet weather as to be impassible for anyone with boots; in 1807 it was marked on a plan as 24 feet wide with ditches on either side. The Seamen's Hospital was built well inside the dam and occupied what is now part of the Society's premises east of the Reading Room. The mud dam probably extended along what is now the pavement in front of the Reading Room, and Edmonstone's mud flat would have been outside. Regulations were made against dragging timber over the dams, and no doubt some of the floods reported at intervals were due to this cause.

The "Royal Gazette" of June 29th, 1837, has the following under the heading "Died :—"

"This morning at 20 minutes past 6 o'clock on Plantation *La Jalousie*—the Honourable Robert Waterton."

The same paper July 22nd, 1837, reports another death :

"This day in town, Archibald Edmonstone, junior, son of A. Edmonstone, Esq., formerly of this Colony."

The following is a copy of an autograph letter of Waterton, which was presented to the Museum by the Rev. Father Barraud, S.J. :—

Walton Hall near Wakefield,

January 18, 1865.

"My dear Father Johnson,—

Allow me to send you my condolence on your recent family affliction. Your good uncle ("qui sobriam duxit sine labe vitam") was my companion for several years. We mourned with Alma Mater in her early and her utmost need. We witnessed her rapid progress to prosperity: and we have lived to see her blooming in meridian splendour—the admiration of our country, and the consolation of every aching heart around her.

"I did not fully enjoy my Christmas visit to dear Alma Mater. The ague kept hanging on me. It shortened my sojourn in her magnificent establishment; and it punished me severely the day after reaching home. Believe me, dear Father Johnson, with great regard, yours very sincerely.

"CHAS. WATERTON."

THE LANGUAGES OF INDIA.

By ARCHDEACON JOSA.

People speak of India as they would of any one country in Europe. Because India happens to be a dependency of the British Empire, therefore the enormous extent of the country, as well as the great variety of languages spoken by the teeming millions of India, are forgotten. We are apt to imagine that our East Indians speak a barbarous jargon. "Do you speak Hindustani?" is a question often asked by those who imagine that the bulk of our people, if not all, speak that language. It may be news to some that upwards of 100 languages differing in many cases radically one from the other, belonging to different branches of the great families of languages, are spoken in India.

We propose, after giving a short account of the sacred language of India, to enumerate and describe the chief languages spoken by the East Indians of our colony. The religious tone, thought, and aspirations of any race can only be found out from its literature, and consequently from its language. The language of the Vedas, to begin with, is called Sanskrit ("carefully constructed"), but it is a Sanskrit peculiar to itself, differing in a great measure from the more modern language. Hardly any Brahmans are to be met with in India who understand the language of the Vedas; the greatest modern scholar of the ancient literature of India was Professor Max Muller. The Sanskrit language ought to be studied. She is the elder sister of most European languages. A great many words are identical in Sanskrit and in English, e.g.:

ENGLISH.	SANSKRIT.
Star	Tara.
Night	Nacta.
Deity	Data.
Nose	Nasa.
Name	Naman.
Mouse	Musha.
Two	Du.
Three	Tri.
Six	Sash.
Seven	Sapta.
Eight	Ashtha.
Nine	Nava.

The great similarity that exists between certain Asiatic languages and those of Europe proves beyond a shadow of doubt that all these languages have sprung from one tongue—sometimes called the Aryan. This is now defunct. The Sanskrit approaches nearest to it. It stands in the same relation to the religion of the Hindus as Latin does to the religion of Roman Catholics. It is the language of the temple. There are 10,000 distinct MSS. of Sanskrit literature, Hindi is the next

language which claims our attention. This language with its dialects is spoken by 100,000,000 people—a number which it is hardly possible to realize. It is derived from Sanskrit and is written in Nagari* In this country, 75 per cent. of the East Indians at least speak Hindi or a dialect of it. Hindi therefore should be studied by those who would converse with them.

Hindustani is the court language of India just as French was the court language of England during the Norman and other periods of its history. Hindustani may be written either in Persian or Nagari characters. After all it is merely Hindi mixed with Persian and Arabic. It is spoken by the Mohammedan East Indians.

Thirty-six millions speak the next language, Bengali. In this country there are a few hundreds of these people and Christianity has made itself felt among them, probably through the efforts of the Rev. Mr. Bhose.

Panjabi, which is the language of some 12,000,000, is also represented in our polyglot country. We have also met a few who speak Oriya, a language spoken by 5,000,000 in Orissa.

At Plantation Hope there were certain coolies whose features are very like the Chinese. These come from that interesting country Nepal, far away amid the loftiest peaks of the snow-capped Himalayas. They speak a language called Nepalese. Only two millions speak this language. Christianity in that country, as far as we know, has not made any converts yet, but there are some few Christians amongst them here. Portions of the scriptures are translated into that language, copies of which are in the hands of our people.

We have also conversed with a few who speak Pashtu or Afghan, from the well-known Afghanistan, a language very much like the Persian.

All the above mentioned languages are included in what is called the great Aryan Family. The Turanian group is fairly represented in this Colony. First we may mention Tamil, which in India is spoken by 15,000,000. Here, we should think it is spoken by 5 per cent. of our East Indians. The labourers employed in Georgetown by the Town Council are chiefly Tamil-speaking people. Christianity has been accepted by a great many of these people and the English Church in India as well as here has been fairly successful amongst them. We will end our list by mentioning the language which has been called the Italian of India, Telugu, Sixteen millions of people speak this language and some few are to be met in this colony. With the exception of the Mohammedans, and a few Nepalese who are Buddhists, all these millions of people acknowledge the Vedas and voluntarily yield themselves to the law of caste. Languages, however difficult, were not a

* The word Nagari, sometimes called Deva Nagari, signifies the language fit to be spoken by the gods, or the language spoken in cities.

barrier to the spread of Brahmanism : languages will not be a barrier to the spread of Christianity.

“ MAR MAR,” AND “ MAR SALA.”

More than once of late the above words have been heard and in our Courts of justice attempts have been made to give other than the correct meaning for the purpose of confusing the minds of jurymen.

The word *Mar* is the root of the verb *Marna* and the root is also the second person imperative present—which may mean *strike* or *kill*. Dr. Forbes, in his standard dictionary, says, p. 159 : “ It may not be amiss to inform the reader that *marna*, like the verb to smite, has a very equivocal meaning : properly it should signify to kill, being the regular transitive from *marna*, to die : whereas it commonly signifies to beat only.”

We know a couple of dozen words which signify “ to kill.” The word *marna* is the most common. I shall quote first from the Bible just one text which can have no manner or doubt that the word is here used in the sense of “ to kill : ”

Acts X. 13 : “ Rise Peter, kill and eat.” “ He Pitar, uth Mār aur Kha.”

There can be no doubt about the meaning of the word *Mār* here. But it may be objected that this is a missionary’s translation, and so we will give one or two quotations from the classics.

In the Shuru of the Baital Paehisi in the 22nd paragraph there is an account that in a certain place there was an uproar and cries of “ Kill, kill ! Seize him ! ” The Hindi here is ‘ Mār Mār, le le.’

In another standard work, the Prem Sagar, the word *Mar* is usually used for to kill, thus in ch. 46. “ I have killed this one to no purpose.” and the word for killed is *mārā*. Whilst thus occasionally the word *mār* may mean to strike it usually means to kill. When an infuriated gang of men armed with cutlasses and other weapons shout “ Mar, mar ” it can only have one meaning, and that is to kill.

SALA.—this innocent-looking word simply means “ brother-in-law.” What more innocent ? But when angry people use this word it is the filthiest word in the tongue, and there is no word in the English tongue to give its equivalent.

Bates’ Standard Dictionary, S.V., states : “ This term is used in a grossly abusive sense.” Forbes uses exactly the same words about the term. The nearest equivalent is the old English word “ cuckold.”

The East Indians are adepts at cursing, but their curses always refer to their relations and families. The names of God and their gods are never blasphemed, as alas, is so common amongst us Christians.

THE ORIGIN OF THE AMERICAN RACES.*

BY HIS HONOUR MR. JUSTICE RUSSELL, LL.B., Trinidad.

The problem of the origin of the American races may be regarded as one which is common to two sciences—anthropology and ethnology. Anthropology, with its measurements of skulls and thigh bones and such like, is comparatively a dry study; and you will be relieved to hear that I propose carefully to avoid it in this brief paper. But ethnology is a flowery field, practically unbounded in its expanse, in which the unlearned may roam at will, culling what blooms strike his fancy and arranging them in the most fantastic wreaths to deck his own brow, if he be an egotistical fellow, or those of some particular stock or tribe which he may select for special glorification to the exclusion of the remainder of humanity: a thing which, as I shall endeavour to show, a good many writers on such subjects have done. Ethnology, at its present stage, is not an exact science. The multifariousness as its *data* and their uncertainty make it easy for the amateur scientist to imagine himself a discoverer, and, by judiciously picking out what suits his purpose and ignoring the rest, to reconstruct whole aeons of the past with as perfect an *insouciance* as a child builds palaces of sticks and straws. Given leisure and industry, he may advance still further and convince others, making them too to see the product of his imaginings: shadowy worlds which were or may have been; marvels and cataclysms; heat and cold, earth and water contending for supremacy; continents submerged; seas changed to deserts; with hordes of primitive humanity (like busy ants) threading the changing maze of land and sea, mountains and plains, here engulfed by thousands, nay, by millions, mustering elsewhere, mingling, interchanging languages, customs, religions: until—behold them emerging in the dawning light of history! How curious! How interesting! But is it science? Well, who knows? Only by much guessing has man ever attained to knowledge: imagination is the real *novum organum*, inspiring now a Copernicus, now a Galileo, now a Newton, with glimpses of truth once seemingly incredible, only to be brought to a certainty by centuries of verification. Will a time come when the ethnologist's theories will be similarly established? Will some master of many sciences, versed in anthropology, philology, geology, history, mythology, folk-lore, comparative religion and the innumerable branches of inquiry which have already shed, or may hereafter shed a light upon the problem, capable of discerning what is certain in each, what is worthy of provisional credence, what is worthless and deserving to be wholly rejected, and endowed with ingenuity and energy sufficient to weld the whole mass into one, and construct a chain of circumstantial evidence, irrefragable

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in every link, and in its cumulative effect excluding every rational supposition save that which he advances : will such a scientist yet arise to solve for us, once and for ever, for example, this problem of the origin of the American races ?

Well, none has risen so far, that is certain. Yet many great minds have applied themselves to the task. Take Humboldt for instance. All who have read his celebrated Travels must have felt that there was an exceptional intellect, exact, encyclopedic, conversant with practically every branch of science as science then was, and capable of bringing it effectively to bear upon just such problems as this. And there can be no doubt he did apply his mind to it : he expressly refers to it in more than one passage. I have searched his Travels through and through, however, without finding one in which he commits himself to any theory. He classifies the native races of the new Continents in two : Esquimaux and non-Esquimaux—that is roughly what it comes to (Vol. 1. pp. 338-9), but as to where either came from he is discreetly non-committal. With the theory of the Asiatic origin of all or of certain of the tribes, he must have been quite painfully familiar : it was the orthodox opinion of the day, and the Spanish missionaries—whose hospitality he gratefully remembers—must apparently have dinned the doctrine too much into his ears : for one cannot escape observing a note of impatience in his reference (Vol. 1, page 325) to Father Garcia's "Tratado del origen de los Indios" as "a tedious compilation." I have not been able to come across a copy of that work to ascertain how far it merits the denunciation ; but our energetic and learned acting Assistant Secretary, Mr. Caracciolo, is the fortunate possessor of another rare old work, Father Gumilla's "Historia Natural de las Naciones del Orinoco" ; and enough is to be found there on the subject to satisfy most readers. In Vol. I., at page 115, the Rev. Father formulates his conclusion clearly and succinctly : "The Indians are children of Ham, the second son of Noah, and are descended from him just as we are descended from Japhet, through Tubal, founder and populator of Spain, who was his son and grandson of Noah, and came to Spain in the year 134 after the Universal Deluge 1788 after the Creation of the World. Similarly Ham and his children became possessed of Arabia, Egypt and the rest of Africa : and some of his grandchildren and great grandchildren, owing to their ships being borne along by the fury of the winds, as I will rate in the proper place, or otherwise, crossed from Cape Verde to the most outlying Cape in all South America, which is in Brazil and is named Pernambuco." Hence the natural right of the Catholic monarchs of Spain to the unquestioning obedience of the American Indians ! In another old work (1776) in the possession of Mr. Caracciolo which he has kindly placed at my disposal for the preparation of this lecture, "Recherches, Historiques et Geographiques, sur le Nouveau Monde," by Jean-Benoit Scherer, the Asiatic theory is again developed : similarity of languages and customs being among the proofs offered, together with such facts as certain vegetal products of one Continent being thrown on the shores of the other. Homer, Hesiod, Diodorus Siculus and other

ancient writers are called to give willing or unwilling testimony; and Plato's narrative (invented or really based on tradition, who can tell?) concerning the Lost Atlantis appears at full length.

Humboldt must have had an overdose of the Asiatic theory, hence his impatient fling at poor Father Garcia. But that such speculations interested him when exhibited in moderation there can be little doubt. In fact in his later work on the Cordilleras he seems to have become a convert to an Eastern Asiatic Convert Theory. In a note to page 52 of the first volume of his *Travels* (I refer always to Routledge and Sons' edition, in Sir John Lubbock's *Hundred Best Books Series*) he refers to the Atlantis without entering into any discussion concerning it; but somehow the feeling comes to one that the problem of its existence was all the time present in his mind when making his elaborate observations of ocean currents, ocean soundings, volcanic convulsions and kindred phenomena in the Canary Islands and in the New World. The task to which he set himself, however, was to collect facts, materials; where these justified immediate and reasonable conclusions he was ready to draw them and was remarkably happy in doing so; but his great object was to collect materials of every sort and description for subsequent study; and I shall later on have to speak about one trove of his—a collection of old manuscripts purchased at Mexico, which has proved of the utmost value to recent Americanists and may probably lead to still more important results in connection with the decipherment of native hieroglyphs.

In the meantime a last word with regard to the Lost Atlantis. The perished Continent is not wholly lost. Among ourselves, a founder and ex-President of this Institute, whose name, well known in European scientific circles, will always be held in honour in this colony, where his invaluable researches have been made, has both spoken and written repeatedly upon this subject. Last year, if I remember rightly, or the year before, he dealt with it incidentally in a lecture which he delivered at the Queen's Royal College; and the interest of his lecture was greatly enhanced by a short address at its conclusion, on the same subject, and to a like effect with certain modifications, by Dr. Watts, Royal Commissioner on Agriculture in the West Indies. Since then I have come across an article in the Fourteenth Report (1912) of the Michigan Academy of Science indirectly confirming the views of both lecturers. The conclusions at which the learned author, Mr. Howard B. Baker, arrives are: that during an undetermined period prior to the close of the Pleistocene Glacial Epoch, there was a much lower ocean level than there has been since; that at the end of that Epoch there was an increase in the volume of oceans and that the general level rose several thousand feet, probably a mile or more: that in the present state of science it is impossible to account for this increase of the ocean on the basis of the previous existence of the excess on or about the earth, and that the natural inference is, that the increase resulted from cosmic causes which for the present must be left in general terms. The importance of this

conclusion, based on a mass of evidence which it is impossible for me even to summarise, as to the general ocean level having risen several thousand feet, perhaps a mile or more. as offering an explanation, partial or complete, for the disappearance of a former continent—or continents, since the Lost Atlantis is not the only one whose existence has been geologically conjectured—is so obvious as to require merely to be mentioned.

Donnelly's celebrated work, "The Lost Atlantis," to judge from a much thumbed copy which I recently borrowed from the Library, must be a favourite work with the Trinidad reading public; and well may it be so. since our Island and the northward chain of Tobago, Grenada, St. Lucia, St. Vincent, and the Windward and Leeward Islands generally, mark, we are assured, the shore of a great inland sea to the east in which the lost Continent subsided. We are all like children, it has been said, picking up shells on the shore of eternity; but the thought is specially brought home to us by the physical fact, as there seems every reason to deem it, that we are here to-night, for example, met together within a mile or so of a great sea whose waves washed formerly a Continent now vanished. If sermons are to be found in stones, the rocks of Trinidad surely have their lesson.

But to return from the Lost Atlantis which in so far as the subject of my lecture is concerned is or was, if it truly existed, but a stepping-stone or bridge connecting the present so called Old and New Continents, and rendering probable the dispersion of races from east to west, or *vice versa*, across thousands of miles of now existing ocean, at a time when coracles and curials were the sole means of transportation, we have had here in Trinidad within recent years a savant whose works bearing on this subject have not yet locally obtained the recognition which they merit. I refer to that series of noble works, monuments of erudition and research, which flowed one after another from the pen of the Rev. Father Etienne Brosse, formerly of the Leper Asylum, Cocorite. It was my misfortune to come to this Island too late to have the privilege of knowing him. It is a privilege which I should have greatly prized, because apart from his great learning he must have been (from many anecdotes told me concerning him by Father O'Byrne, our late Vicar-General), a man of an exceptionally interesting and lovable nature: modest, retiring, simple as a child, and self-devoting in whatever cause he espoused in the interests of science or humanity. The dedication of one, the first of his works bearing on the subject now in question, seemed to me even as I heard of it from the lips of Father O'Byrne before I had read it, a touching index to the man's character. It is worded as follows:—"O Mon Dieu et Père Bien-aimé, je t'offre ce petit livre, qui a été composé dans la solitude. En l'écrivant, je n'ai cherché que la vérité; mais comme dans mon isolement presque tout a fui pour moi, sinon toi, o mon Père, et que personne ne sera la pour recevoir mon œuvre, c'est à toi que je la confie et l'abandonne. Ce que tu feras sera bien fait. Si tu la soutiens, je te bénirai tout autant."

With regard to the personal career of the reverend savant—for such he truly was—my recollection of what Father O'Byrne told me is too vague at this interval of time for me to venture on any particulars further than that I believe he came here late in life partly with a view to studying scientifically and from personal observation the subject of Leprosy, on which he wrote a book, and the language, habits and idiosyncracies of the East Indian population here. As illustrative of his retiring disposition, one anecdote which Father O'Byrne gave me is rather quaint, and with Father Casey's permission I will endeavour to tell it, though I wish Father O'Byrne had been here to do so instead, as it must inevitably lose many of the finer touches in my transmission. Father Flood, who was then Archbishop—most of those present must remember him, as he died only a few years ago and his memory is green, I am sure, in the hearts of all who knew him—had issued an order that all the priests in the diocese must preach by turn in the Cathedral. When Father Brosse's turn came he was reluctant—to address so large an audience was a thing contrary to his habits, at any rate of recent years; but of course he obeyed. He took as his text that verse in one of the Gospels: "And Mary kept all these things and pondered them in her heart." "What, my dear brethren," he enquired, "are we to learn from this text? Here was a sainted woman who might have given the world many interesting particulars regarding the infancy and youth of her Divine Son; but no, she kept all these things and pondered them in her heart. What ought we to learn? A virtue too little thought of, too little studied: the Christian virtue of Silence. I venture to impress upon you the importance of that virtue: and, as a preacher ought to practise what he preaches."—He immediately vacated the pulpit. He died at a great age, and his end was euthanasia!

Father Brosse was an adherent of the Asiatic theory. That is the main point in his works which affects the subject of my lecture. It is not a main point in his works, or only one out of many, when they are looked at as a whole. Where was the Garden of Eden? You remember how during the nineties of last century the press teemed with works on that subject. "Babel Und Bibel" was one outpost in the fray, and the German Emperor one of its conspicuous assailants. That, then, was among the problems to which Father Brosse addressed himself, and his general contention may be briefly indicated by translating the opening words of his third work (of the series), "L'Inde Inconnue," "Some savants have suspected"—a literal translation sounds very bald, but in French the passage reads well, as do all the Rev. Father's writings—"that Eden was the ornament of the Indies; but generally opinions have gone elsewhere. Some are in favour of the Euphrates; others give the honour to Armenia, whence derive their source the Tigris and the Euphrates comprised in the description given in Genesis. These are the two opinions most commonly held. Our personal conviction is in favour of the great Peninsula. Proofs have come to hand, and are still coming, in such numbers that the solution seems to us a definite one. Why has

this country, which realized excellently all the *data* of the problem, been rejected? Because India and its literature have only been known in our times. Before our century the problem of the site of Eden could not therefore be known." And he goes on to show that Indian traditions reproduce all the main features of the biblical account: Eden, the Temptation, the presence of the Hamites, the working of metals, the Deluge. It is impossible in a short lecture to give any adequate account of the vast mass of proofs, historical, traditional, philological and geographical, which are brought together in his three comprehensive volumes. All that one can do is to pick out one or two points by way of illustration. His theory with regard to the location of the land of Cush may serve for this purpose. Four countries, lying wide apart, he says, have been identified as the land of Cush: Southern Egypt, Southern Arabia, the lower Euphrates, and the Western Himalayas; and he does not dispute but in a way each and all of them are entitled to the designation; only, he maintains, the first three were mere Colonies, to which the name of the Mother Country came to be applied much in the same way as Europeans have called their Colonies New England, Nova Scotia, New Spain, New Andalusia, and so forth; the Mother Country itself is the fourth in the list; that is to say, the original Land of Cush is the Hindoo Kush; and the land of Havilah (or Navihah, as apparently it ought to be pronounced) is similarly there *in situ*, he maintains, with its biblical name hardly altered—Xavilah is Kabul. North-Western India is thus the home of the race, and from thence it spread south and east and west, penetrating the great Peninsula, peopling Polynesia and overrunning Mesopotamia, Arabia and Egypt. Now, when one thinks of these three last countries as they are known in history, this appears impossible, for the simple reason that in history they appear peopled by races speaking languages which are undoubtedly Semitic, or at any rate closely akin to the Semitic. Take Mesopotamia as an example: the Babylonian Empire was Semitic; the Assyrian Empire—that scourge of Western Asia—was Semitic; how is it possible to set up a title to its possession in favour of the children of Ham? Well, prescription no doubt has run, but the fact is well established that the original inhabitants were not Semites, but Sumerians or Accadians; and no less an authority than Prince Caetane in his monumental work, "Annali del Islam," dealing at length with the conditions which led up to the great eruption of the Arabs northward into Mesopotamia and southward into Egypt, and citing the most recent investigators on the subject, concludes: "We are therefore justified in supposing that the Sumerian cities may have been *Colonies* of a maritime people come from beyond the sea—*India* or Indo-China? They were perhaps the race who carried the treasures of the middle and of the extreme east to the merchants of Near Asia, and their civilisation and riches were the results of the commerce which was in their hands, if their appearance in Babylonia is anterior to 12,000 years before Christ." And he explains that recent discoveries offer grounds for holding that before the arrival of the Semites in the territory in question, Sumerian

monuments there indicate the existence of a civilisation established 7,000 years. The problem of South Arabia, and the existence of a highly developed Hamitic civilisation there in times extremely remote, before the desiccation of the Peninsula had begun, and while great rivers and inland seas interspersed its now sandy deserts, is too obscure, and too unfamiliar even in outline, for me to venture to say a word upon it. As to Egypt, the most recent researches have left uncertain the question of the original population in prehistoric and early historical times: but various traits have caused the Egyptian, Berber and Cushite languages to be classed together as sub-families of a Hamitic group remotely related to the Semitic; though as a developed language Egyptian was certainly extensively influenced by the Semitic. There are not wanting, therefore, in works by independent and quite recent writers, facts which more or less strongly confirm the theory put forward by Father Brosse as to the dispersion in times very remote of a Hamitic race who were traders, civilisers, raisers of enormous monuments, and in many respects in advance of other races. I say in times extremely remote: that is of course; the antiquity of the human race is a matter still to be determined; no calculation even approximately correct has yet been agreed upon. Most anthropologists seem to proceed upon the assumption of a monogenous origin; that is to say, the descent of all mankind from two first parents: and the classifications of writers certainly not unduly biblically inclined have preserved the old appellations, Semitic, Hamitic and Japhetic, as descriptive of portion at least of the human race. The family of Noah are therefore still in question, and when we set aside sacred tradition, or seek elsewhere for confirmation, or form conclusions independent of that tradition, we find ourselves groping among the merest vestiges of things that were. Geological changes, climatic changes, changes in the physical distribution of land and sea have taken place, and we can form only the vaguest surmises as to their nature and extent. How, then, can we determine even in the provisional manner the migrations of humanity, much less fix the stocks from which the existing races have descended? It seems a thing impossible! Yet the mind of man is so constituted that it will not—cannot abandon the problem, and all credit to men who, like Father Brosse, have devoted long years of study, or it may be whole laborious lifetimes, to settle here a point, and there a point, which, being firmly established by patient research, may help towards the reconstruction of the elusive past.

This is not the way Father Brosse states his case. He puts it infinitely higher—too high. I may say at once, for me. Probably the fault is mine, but at the present stage of my comprehension of the subject, I cannot see justification for identifying as Hamitic empires such as those of Babylon and Egypt as known to us in historical times, when according to all recent authorities they were in the main undoubtedly Semitic or Semitised. Sumerian or other Hamitic elements there may have been, and no doubt were, merged—submerged—in the general population; but it appears to me that the learned Father is not sufficiently careful to indicate the very partial extent to which the term Hamitic is

applicable to them. Similarly with regard to languages: developed Babylonian was a Semitic language, that is undoubted; if there was difference of opinion on the point before 1892, when Father Brosse wrote his first great work, "Les Chamites," recent researches have removed the doubt: Sumerian elements no doubt survived in it—probably very considerable elements, but its essential characteristics were Semitic. Hebrew is Semitic: Arabic is Semitic: Egyptian, as developed in historical times, was enormously influenced by the Semitic; and the Cushite or Hamitic elements can only conjecturally be identified. What reliance, therefore, can be placed on analogies from these languages to prove that others, such as those of Polynesia, are Hamitic also? Might it not with equal or greater force be argued that such analogies go to show that the Polynesian tongues too were Semitic, or influenced by the Semitic? With the best good will in the world I cannot follow Father Brosse into some of his conclusions; yet, on a lower plane, it does appear to me that there is evidence of various kinds to support, conjecturally at least, the main contention of the westward and possibly also eastward, dispersion of an Asiatic race, whose origin may not improbably have been in North Western India as he maintains. If that lower plane on which the matter seems to me to be arguable be adopted, then step by step the student—and this lecture will not have been wholly in vain if it induces even one or two to become students of works so worthy of study—may advance to altitudes of comprehension and verification to which I have not attained, and find that it is not Father Brosse who overstates his case, but I who have understated it.

You may say I have not yet said a word with regard to the Rev. Father's views concerning the native races of America. Well, I *have* said so much—that he adopted the Asiatic theory; and as I have said before, I think that is the main point. With the utmost respect for Father Brosse, I cannot help feeling, that he makes perhaps rather too much of his favourite stock, the Hamites. To say he finds them everywhere would be an exaggeration; but he certainly follows them over a great part of the habitable globe and identifies them with races their kinship to which is on the face of the matter somewhat improbable. His hypothesis involves this: that the Hamites were not a black but a *brown* race, with straight hair, morally inferior, but intellectually much in advance of their contemporaries; artistic, laborious, with a special genius for colossal and especially megalithic architecture, and cunning in the working of metals. Where he finds all or most of these characteristics present in a particular race with the addition of a greater or smaller number of confirmatory circumstances, such as local traditions as to their having originally migrated from somewhere else, customs resembling those of the inhabitants of Northern India, or of ancient Egypt, Babylonia, and Chaldea (which, as I have before indicated, he seemingly treats as being Hamitic), he extends that designation to the race under consideration, and that race in turn becomes a link in his chain. Now, as everybody knows, there were three areas in the New World where prior to the coming of Columbus civilisation, various arts, and architecture in

particular, had advanced to a considerable degree, viz., Peru, Central America and Mexico. The dominant races of these countries in early times find a place, therefore, in his list of Hamitic Colonies. Not as a matter of course, please don't understand me as suggesting that; he follows his usual careful system of verification, and though disclaiming any pretensions to be an Americanist brings together a considerable number of testimonials from those who were so.

I will not attempt to summarise them, because the study of American antiquities has advanced so much of late years that if one is to quote it ought to be from late writers rather than from those whose published works were accessible to Father Brosse when issuing the second edition of "Les Chamites" in 1892. But, so far as my reading has gone, later writers are rather adverse to the Asiatic theory. Thus, in a most interesting collection of papers translated from the German and published under the auspices of the Smithsonian Institution Mr. Eduard Seler, undoubtedly an Americanist of the foremost rank, at the conclusion of a long and most elaborate account of the wall paintings of Mitla, the celebrated burial-city of the Zapotec kings and priests, says emphatically: "I believe that these pictures are tangible evidences pointing to the idea we ought to form of the Toltecs"—one of the races particularly referred to by Father Brosse—"whose name has been so often mentioned and so much abused; for they were neither mere mythical forms dwelling in a fantastic region beyond the clouds, nor the inhabitants of a single small city, *least of all an exotic civilised race that spread over the whole American Continent, coming from the primal Asiatic home of man lying somewhere near the biblical paradise.*"

Such a pronouncement, coming from an expert of the highest eminence, is a formidable negative to the Asiatic theory in general, and to Father Brosse's version of it, connecting these civilised American races with the biblical paradise, in particular. Nevertheless I shall presently submit that neither the one nor the other of the theories pronounced against is conclusively disposed of. In the meantime, as I have begun dealing with the works of recent Americanists, let me, before leaving that branch of my subject, deal with a matter to which I have already referred by way of anticipation, viz., the most valuable collection of manuscripts purchased by Alexander von Humboldt in Mexico, and presented by him to the Royal Library of Berlin in January, 1806. To speak of this collection as an American Rosetta Stone would be going too far; nevertheless certain similarities may be recognised. Both give a clue to the hieroglyphs of an otherwise unintelligible past, largely owing to the fact that they belong to a time when that past had already begun to give place to a new civilisation by which it was destined in a very short time to be almost obliterated. Only a few years separated the dates of their respective discoveries: the Rosetta Stone was found in 1799 by French engineers attached to Napoleon's expedition to Egypt: Humboldt's visit to Mexico was in

1804. The Rosetta Stone contains, inscribed upon it, three versions in Hieroglyphic, Demotic and Greek, of a long decree of the Egyptian priests in honour of Ptolemy V, Epiphanes, and his wife Cleopatra. The Humboldt picture-writings contain—what? Well, many things; but I will take just one or two, and those the simplest, to show how the work of decipherment has been accomplished. The Christmas is past, and we are now in Lent, otherwise you might think I was indulging in some sort of seasonable pleasantry, when I inform you that one of the writings is nothing more or less than an account for 24 turkeys. There are other items, such as red pepper to go with the turkeys, and corn and cocoa beans; but the turkeys are the *pièce de resistance*. Another is an account, duly receipted in Spanish, for 101½ pesos for the women who made tortillas at the house of Senor Manuel de Olvera; and yet another, dated 4th February, 1571, also for turkeys—turkey with red pepper sauce evidently was then, as I believe it still is, the favourite dish of the country—and other provisions supplied to the village of Mizquiyaullan. These, and a number of others which have been practically completely deciphered, show that at the end of the sixteenth century this system of picture-writing was in common commercial use, and well understood for ordinary purposes by the Spaniards. What a pity, you may say, that they did not follow it into its more elaborate uses in connection with sciences, such as chronology and astronomy, in which the ancient Mexicans were fairly well advanced, their history and the native religions. Well, exactly in like manner, what a pity it is that none of the scribes who prepared that lengthy polyglot inscription on the Rosetta Stone bequeathed to the world some luminous treatise on Egyptian hieroglyphics, instead of leaving it to Champollion and others some thousands of years later to supply the omission. That the Spanish missionaries did study, and had really a good general working acquaintance with the ancient Mexican picture system, is clear from other fragments. One particularly illustrating this is Fragment XVI: it is a strip of thick, firm paper, 35c.m. long, 45c.m. wide, looking like European paper made of rags, and on it is represented, in the picture system of the country, a catechism of the Christian faith—corresponding section for section with the text of a *Catecismo en Idioma Mexteco*, printed in 1339 at Pueblo, but in use, there is reason to believe, since early Spanish times—followed by the Ten Commandments. How unfortunate, again, that such learning should have been lost! But thanks to Alexander von Humboldt's industry as a collector, it has in part been regained already; and with an array of acute and unremitting investigators such as Selser, Fürstmann, Schellhas, and the extensive staff employed by the American Ethnological Society, a more or less complete knowledge of the entire system, even in its more difficult branches, such as mythology and ritual, will probably ere long be reached. Then will be the time to speculate as to the origin of the American races! When we know all that can be known concerning them, their customs and beliefs, not at second-hand, but at first-hand from still extant inscriptions, and primitive communities such as those of the Zuñi Indians, where the old

rites linger, and understand how their languages and ideas stand related one to another, and so can form really correct comparisons between these and those of other countries, legitimate and more or less reliable interferences will become possible. In the meantime the work of collection and decipherment to be done is enormous. True, many collections already exist; their extent and variety is to the general reader simply bewildering; but beyond doubt the collector's work is not yet done, or one quarter done.

It is on this subject that I desire especially to say a few words before coming to a close. We have no surviving Indian communities in Trinidad that I am aware of; but a small collection in the Museum downstairs—when made or presented to the Institute, I shall be glad if somebody will inform me, but neither added to nor I fear much studied for many a long day—we have a proof of the wealth of ancient pottery still to be discovered in this island. Now, pottery is one of the most ancient forms of art and in Italy, Greece, Egypt and elsewhere has furnished information otherwise unobtainable and shed a most important light on many branches of antiquarian study. So also in America: among the publications of the American Ethnological Society you will find several bulky volumes devoted wholly or in part to specimens of native pottery belonging to all parts of the northern portion of our western hemisphere. That is the field which the Society has especially chosen and made its own. But collectors from the United States go elsewhere also; nay, I am informed valuable collections are shipped annually to New York from Port-of-Spain. That is quite right, I have not a word to say against it; in the great museums of the States they can be studied at leisure by scholars who have the necessary time and knowledge to bring to bear upon what they represent: animal forms which have a known place in the old cults, figures of turtles and alligators and bats, for example, hieroglyphs and conventional symbols which are wholly unintelligible to the ordinary observer. But ought not our local museum to come in somewhere? Has it no claim? Have we none interested—no *students* at least in these fields of inquiry? If so, it is scarcely to our credit, for the means of study are not lacking. The Smithsonian Institution furnishes us gratuitously with its invaluable publications, and he who has read through and assimilated them will be—well, very much better qualified to lecture upon this subject than I am myself. It is not, therefore, the means that is wanting. Nor can I think that the will is wholly wanting either. I am sure these things do have an interest for many here; only, I am afraid, very few of them know, for example, about these publications of the Smithsonian Institution which are downstairs waiting to be looked into. With all its imperfections, of which I am only too conscious, my paper to-night will not have been wholly useless if it calls attention to the means of study and self-improvement thus afforded. We cannot afford, any or many of us, to devote years or a lifetime to such studies; only the wealthy, or those specially gifted and who enjoy the patronage of great learned institutions, can do that: but it is possible for quite a large proportion

of us to give some part of our leisure, a few hours at least, to the perusal of such reports and so enjoy the fruits of others' labours.

One last word with regard to the Asiatic theory. I spoke of it as having been the orthodox one at the beginning of last century, and despite the pronouncement of Herr Eduard Seler, which I have quoted, it is, I think, still entitled to be considered such. The assumption of a monogenous descent for man, common practically to all schools of anthropologists, has, where any attempt has been made to speculate as to his first *habitat*, gone hand in hand with a kindred assumption—so one cannot avoid calling it, both being in accordance with a prevailing tradition, preserved, as we have seen, by more than one large section of mankind—that the original home was somewhere in or in the neighbourhood of Western Asia. The distance from the Western Himalayas to Mesopotamia, or even to Egypt, is after all relatively insignificant. No rival theory has received any general acceptance; and in this wide sense the Asiatic theory still holds the field. What the lines were upon which the common stock dispersed itself throughout the globe, how journeys or voyages were made from continent to continent, how differences such as we now recognise as fundamental ethnologically came to be developed and perpetuated: these constitute another and more difficult problem. In justice to speculators such as Father Brosse, it is right to consider how enormous the difficulties are. The ocean has increased a mile in depth, one geologist says; the earth is in a process of desiccation, declares another: and vestiges of civilisations which had ceased to exist before the dawn of history are not lacking to confirm both one and the other view. Under such circumstances, to hope to trace in a roughly continuous or distinct chain the migrations, not merely of mankind generally but of a particular race or stock with marked physical, intellectual and social peculiarities, is to be greatly sanguine; and practical workers within a narrower sphere, intent on comparative *minutiae*, and strongly impressed with the common indigenous character of the ancient local civilisations, are likely to regard somewhat impatiently the picking out of particular groups, and their identification on mere general grounds with known foreign stocks. It is in this way, I think, that we must construe Herr Seler's declaration. To the theory of the Asiatic origin of all mankind, including the American races generally, he would, one may conjecture, have no more objection than anthropologists have had; the point of his protest is against the attribution of an "exotic" origin to selected races, and their being held up as different in historical development and culture from other races of the new continents. To bring the two views into harmony some modifications—very important modifications, in fact, on Father Brosse's theory—are obviously necessary; but to regard it as entirely discountenanced by the researches of recent Americanists would probably be an error. The children of Noah, as I have said before, still keep their place as the progenitors of great divisions of mankind: those of us who love and reverence the sacred narratives recognise the fact as confirmatory of their truth; those whose learnings are in another direction still accept

it as at least a convenient basis of classification for certain purposes. And if Father Brosse's theory as to the dispersion of the children of Ham eastward and westward be adopted, not on the somewhat eclectic principle (if I may so put it) which he adopted in selecting particular races and excluding others, but on the comprehensive supposition that, despite differences in physique, culture and religion developed in the course of ages, the races peopling certain large areas, especially those widely separated from others, may originally have belonged to one common stock, and that one the recognised stock most closely resembling them in ethnical peculiarities generally—well, there is no better hypothesis to exclude, and commonsense, no less than the learned proofs put forward by the Rev. Father himself, goes to support it. It is right to remember that Father Brosse's selection was not in any sense a narrow one; it included several African races, among others the Fulahs; as I have spoken of commonsense, perhaps I may venture, having lived eight years in a country where the Fulahs were formerly the dominant race—the upper Gambia is called Fuladu or Fuladugu, i.e., the Fulah country—and are still numerous, to offer a general personal impression for what it is worth, and say that the identification of that race with the inhabitants of Northern India does not strike me as unreasonable when sufficient allowance is made for the continuance of variation over a very extended period. Father Brosse's studies were directed mostly to the east; had he lived longer, and studied equally extensively the races of the New World, the unity of type and culture, amid numberless differences, recognised by recent investigators, might not improbably have led him to broaden his theory on such lines as I have indicated. I am sensible that I have done very scant justice to my subject generally, and to his works in particular; but time would not allow me to attempt more

FORTY YEARS' LIFE IN TROPICAL GARDENS.

By ELEANOR S. WABY.

In the summer of 1873, after spending a delightful day in Kew Gardens, my husband, who was then employed at Kensington Palace Gardens, said to me, "How would you like to go to Trinidad? The Kew people have offered me an appointment there, which I should like to accept." The first question was, Where is Trinidad? I found afterwards that I was not singular in my lack of knowledge; very few people could tell me more than "it was where the best cocoa came from." We found out all about it, i.e., that it was a West Indian Island, that it took three weeks to get there, that the postage on letters was one shilling, and that we should find it very hot! We did. Life in Kensington was very bright and happy, but the prospect of a larger income, a free house, large garden and sundry liberal allowances was alluring, to say nothing of seeing the many plants we knew and loved in the hot-houses and sub-tropical gardens, in their native home and full beauty, so without much hesitation I said, "If it rests with me we will go." In those days the journey was long and tiresome, changing steamers at St. Thomas and St. Lucia where we stopped to coal, and calling at nearly all the intermediate islands, yet it was all so new to us that we did not weary, though we were 23 days getting from Southampton to Trinidad. We landed late on Saturday night in pitch darkness and pouring rain; our boatmen missed the proper landing stage, so my husband and two priests dragged me up a sort of wall into Trinidad. We were taken to a barn-like hotel very bare of furniture and shown into an unceilinged room, which contained a huge four-post mahogany bedstead closely shrouded in mosquito-netting. I, of course, had never seen mosquito-"bars" before and I wandered round and round trying to find a way to get in. At last I decided to untuck a bit at the bottom and crawl in!

At breakfast next morning I tasted my first banana! I had never even seen one before either at Covent Garden Market or in the choice fruiterers' shops. A fellow-passenger on the Mail boat described them as a stodgy sort of thing, with a pear-drop flavour. I agreed with him then; I wouldn't now! It was the same man who carefully peeled an Avocado pear and gave me to bite. Oh! the horror of that mouthful and the subsequent sickness! It was months before I had the courage to taste a properly prepared one. I had another shock when on asking if potatoes were cheap I was told "potatoes did not grow in the tropics and were dear and not over good when obtainable," but that I must learn to like plantains. All I knew of plantains were the seed spikes given to birds, i.e., "English plantains," and I could not imagine them as an article of food. These various experiences have made me always very careful to prepare local products in the best possible way before offering them to strangers. When we enquired the way to the Botanical Gardens and

expressed our intention of walking to them, our landlady in vehement language and with much gesticulation said we were "like all the English, too hard-headed," but we would learn, "Oui, oui." We have learned. But oh! the memory of that first walk under a tropical sun, it abides with me. My husband forgot manners, courtesy and everything else in the wonder and delight of it; he gazed spell-bound into windows, boldly trespassed into private gardens, and at times seemed scarcely able to believe the evidence of his eyes—plants he had thought wonderful when tenderly cherished in hot-houses were to be seen growing in the open in wild luxuriance. Every few steps brought a fresh surprise. I was glad when we reached the Savannah, but even there he suddenly exclaimed, "Do touch that mimosa on the ground; it's the true sensitive plant. Why! it's growing like a weed, poor little 'shame bush.'" He soon found it a troublesome weed!

All that came before was as nothing to the wonder and glory of the Gardens. We forgot we were hot and tired as we passed from one surprise to another. To see cloves in bunches on trees, or crunch them unwittingly under our feet, nutmegs with their apricot looking husks split open shewing the crimson mace wrapped round the nutmeg itself, cinnamon with its spicy bark, coffee trees full of fruit and many other things we had seen only in spice boxes or shop windows!

The Botanist (Mr. Prestoe) went round with us, kindly explaining everything. The greatest surprise of all was when seeing something on the ground like a cannon-ball I asked what it was. "Oh! that's a Brazil nut," he said, "or as you know they have many nuts in that hard shell, I will have it broken." He did, and the marvel of seeing how the nuts were packed inside took away all power of speech. I still think it one of the most wonderful things in nature and love to show it to strangers.

We also tasted a mangosteen, which had fruited for the first time in Trinidad. I cannot describe its exquisite flavour. It was a great pleasure to see in the flower garden so many home favourites. No wonder we got back to the hotel in the dark, very tired and late for dinner.

It was well there was so much to interest us, for there were many disillusiones. True, the income *was* larger, but it did not take long to realise that a dollar in Trinidad was not worth more than a shilling was in England. The free house was there, a terribly delapidated "little wooden hut," free also to huge tarantulas and other spiders, roaches, lizards and occasionally snakes.

But the large garden, ah! there was no disappointment there. Our predecessor had planted in and round it all that was good for food, only I was so lamentably ignorant of how to use it. I learnt principally from the old women who came to sell eggs, fowls and farine. But how they laughed at my attempts and the names they called "la pauvre Madame Anglaise." "Imbecile" was the mildest and most frequent, but *what!*

They taught me, among other things, that a bread-fruit required more than baking to turn into a crusty loaf, as I had been told on board ship! In emphatic patois they told me how to make guava jelly clear, firm and bright, the many uses of farine, the delicacy of "palm" cabbage, the leaves that were good for healing and making tisane for fever and pain. I have reason to remember them gratefully and have passed on their wisdom to hundreds of amateurs.

The sundry allowances were generous, plenty of good milk from Government House cows, fruit of all kinds in great abundance. I do not think there was ever a time when there was not something that could be made into jam or "confiture." Best of all, we were rarely without large and juicy carambolas; we liked them better than anything else, raw, stewed for puddings, or preserved, and do still. I experimented with everything, making many mistakes, but I learnt. One mistake was laughable. I had told my servant to put on some "gooseberries" to boil and when soft I would add the sugar. She put them on in an iron skillet used for roasting coffee. I did *not* put sugar to those gooseberries, but the juice stained our floors beautifully!

In the mango orchard not far from our house all the best (of that time) were grown. The "peach," "strawberry" and "Peters" hold their places in our memory. Yes—

"We remember in days now far, far away,
The swift eager rush in the dawn's rosy light,
Thro' the dew-laden grass to our favourite tree
To see if a 'Peters' had fall'n in the night.

No matter that 'Gordons' lay thick in our path,
We cared not for them, and with scorn passed them by;
'Twas 'Peters' we wanted and 'Peters' we got,
And e'en now we look back on those feasts with a sigh."

Since then I have eaten many delicious mangoes, but except (to my mind) the unmatched "No. 11" I remember none better than those in the Trinidad orchard.

No one who has only seen the litchee in dry form can imagine what a lovely sight it is growing like bunches of scarlet waxen strawberries among dark green leaves. When freshly gathered the fruit tastes like a Muscat grape.

In time our house was renovated and made very cosy for us, only alas! to be burned to the ground in 1875 through the carelessness of a servant. My husband was in town at the time and did not arrive till all was over. In saving my two babies and trying to get some valuable papers I was terribly burned about the head and hands. The Hon. and Mrs. J. Scott Bushe, who lived near, came at once to our help and fed and clothed us till I could use my hands (we were reduced to absolute beggary). Till we left Trinidad they never missed a chance of doing us a kindness. I may say the same of dear old Bishop Rawle. Of the many friends who helped us in our dire need I think Mr. John M'Carthy is the only one left

in Trinidad. The new house built on the site of the old one was a great improvement on it, and we were very happy till an outbreak of malignant fever prostrated us all and took away our youngest and prettiest. Much sympathy was shewn us and help given in our trouble.

I think no place can be more full of delightful surprises than a tropical Botanic Garden. There is always some wonder or beauty to see. The opening of a rare and choice lily, the flowering of perhaps a priceless orchid; a specimen from the forest, or a wealth of blossom on some towering tree

I was privileged to see a copy of Charles Kingsley's "At Last" marked and annotated by Mr. Prestoe, so I knew where to look for the exquisite "Amherstia," the *Lignum-Vitæ* trees with their glossy leaves and lilac flowers, the giant bamboo, the wonderful Temple of whispering palms, the *Brownia* with its scarlet clusters; the African palms with their glossy nuts, and many other beautiful works of nature.

The glorious mountains at the back of the Gardens were at times brilliant with flowering trees, and alas! at times with the vivid flames of mountain fires, which I watched in fear and trembling.

In the autumn of 1878 Mr. Prestoe was invited to go to Demerara and select a site for the formation of a Botanical Garden. On his return to Trinidad after having selected a site and prepared a plan for a garden, my husband was offered the post of Head Gardener in Demerara at a slight increase of salary. I did not want to leave Trinidad or my beloved and prolific garden with its constant supply of fruit and vegetables, but my husband thought it would not be wise to refuse. The prospect of laying out a garden of the size and on the lines of the plan was most attractive to him.

We left Trinidad on the 21st December, 1878, and arrived in Demerara on the 23rd. Owing to a severe accident immediately before embarking I had to be carried out of Trinidad (I was dragged in!) and carried in a deck chair through Sandbach, Parker's wharf on arriving at Georgetown. We were taken to the Tower Hotel and the proprietress (Mrs. Murray) treated me with great care and attention. I am very proud of the fact that she still allows me to call her my best friend. As soon as possible after our arrival Mr. J. E. Tinne, afterwards Chairman of the Board of Directors, called to drive my husband to the scene of his future labours. Never shall I forget the shock of his return, looking the picture of misery and disappointment. "Oh!" he exclaimed, "I wish I could take you all back in the same steamer. There is no house for us, no garden, nothing but mud and rank vegetation. I can never make a garden there!" I was ill and nervous, and in a very weeping voice said, "We can't go back and you will have to do your best." Well! he did his best and has had the satisfaction of being told that the garden made in such an unpromising situation cannot be surpassed, if equalled, in the West Indies. On the 2nd of January, 1879, the first sod was turned and

the work commenced. But oh, what work it was! For a long time I was clerk, secretary and assistant paymaster. There was no office, no house had been taken for us, and after a short stay at the Tower Hotel we were obliged to stay in the best that could be got near the garden site, the old Government Laboratory on the Brickdam. It contained only one divided living room, one bedroom and a sort of box room, and there we were crowded together for three years and two months.

The garden, now "Fisher's Road," was utilised as a nursery, all the beautiful Saman trees forming Vlissingen Avenue were raised there. Indeed all the first trees, shrubs and flowering plants of the future Botanic Gardens were started there. We had not a foot of private ground, no fruit, no flowers or vegetables but those we bought. I felt the change dreadfully and the children felt it even more, the house was so small and hot. No wonder we looked back longingly to our beautiful home and the many advantages of our life in Trinidad. The Directors of the Gardens, Mr. J. E. Tinne, Mr. W. H. Campbell and dear old Sheriff Brumell, did all they could to lessen the discomfort of our position. The latter living near put much pleasure and happiness in our life by his constant kindness and forethought. His death was a personal grief to us and a distinct loss to the Gardens.

Our still nearer neighbours, the Rev. Thomas and Mrs. Slater, were like parents to us and our children and were always a ready help in times of trouble, till the death of the Minister and departure from the colony of "Slater dear," as my babies always called Mrs. S., a name held in loving remembrance.

Mrs. Slater and I were able to do a great deal of helpful work together during the dreadful yellow fever times of 1881-82, when the brightest and bonniest seemed the chosen victims and we asked each other fearfully who would be the next. It was a terrible time.

In August, 1879, Mr. G. S. Jenman, who had been appointed Government Botanist, arrived and took command. The history of the Gardens, how they were made and supplied, will, I hope, be written by an abler pen than mine, a pen accustomed to write hard names and technicalities. The "Story of the Avenue" has been written and was published in the "Weekly Argosy."

No one seeing the Central Avenue now can imagine what it was like when Mr. James Thomson, Mr. John Brumell, my husband and I went exploring beyond the newly-laid out "Oval." We scrambled over tree roots, slipped into muddy pools, made our way through bush and scrub, and with all our trouble did not go far, it was too tiresome. Now a walk or drive up the Avenue to the Lamaha is a delight. It is always beautiful in the early morning when every leaf and flower is sparkling; in the heat of the day it gives pleasant shade. In the bright moonlight or clear star-shine its waving branches are like fairyland; but I always like its peace and soothing calm on a dark night "when the cares that affect the day" are lost in its shadows.

It is a pity so few people are able to enjoy the Gardens at night, they are so lovely, the lilies are open, the nocturnal flowers yield such sweet fragrance. A special few have at times obtained permission to enter, but the general public fear mosquitoes and malaria and do not like darkness.

In 1881 the house built for the Head Gardener, though not finished, was habitable, and how glad we were to take possession! True, as people said, it was badly planned and constructed; conditions of health and comfort were sacrificed to picturesqueness, the dormer windows harboured bats, the heavy struts holding the rafters were dangerous and gave us many a severe blow, the roof sloped to within three feet of the floor, the house itself was low, squat and damp; but we who had so long been cramped in a "but and a ben" made light of minor ills.

The house has been altered many times, the awful struts have been removed, the structure and roof raised and many comforts added; indeed every alteration has been for improvement.

Living in the Gardens was very hard at first. Messengers had to be sent to town for everything. No telephones, no cars, no carts calling for orders, no ice vans, no electric light, no neighbours, only one house in the Bourda district. Wet or fine the children had to walk to school, the boys far down the Brickdam to Mr. Cocket's, the girls to Camp Street Convent. How we all rejoiced when the mule cars started and children's and servants' tickets could be obtained at \$1 each per month.

The condition of life in the Gardens for our successors will be on pleasanter and healthier lines.

It was natural that the constant turning over of long abandoned soil should bring malaria in its train, and we were all so ill that in 1883 Mr. J. E. Tinne offered to send us to England in one of Messrs. Sandbach, Parker & Co.'s sailing ships, an offer gratefully accepted for the children and myself, but as there was no Assistant Gardener, impossible for my husband as he could not get leave. The day before we sailed a frail little three-year old boy died and was buried a few hours after. Still for the sake of the other children I had to go. We had such calm weather that we were 49 days getting to Liverpool. The children did not like living in England at all. And we were all very glad that, Mr. Derry having been appointed Assistant Gardener, my husband was able in 1884 to come and fetch us all home again. Home in every sense of the word our house was not only to our family but to many others on Saturdays and holidays. The house was over-run with children and many in distant lands may recall the jolly times they spent in "The Wabys' house." Except officially it was never called anything else.

We had not heard of the Scouts' motto in those days, but we always had to "be prepared" for all sorts of emergencies or accidents. Small knees would get hurt over unfinished roads, and nurses hurried their weeping charges to the Wabys to be mended, petted and consoled. Some-

times a tumble in one of the lakes meant a bath and a change of clothes. Some of the emergencies were amusing. Boys climbing forbidden trees descended hurriedly, leaving part of their garments behind them and had to borrow others not always a fit. One boy who fell into a malodorous heap of "putta-putta," was obliged to discard all his outer garments, wait till dark and go home in a girl's frock. I wonder if he remembers. One day going up to my son's bedroom, I saw a strange pair of small legs under the bed. Investigation brought forth a small boy who told me he had come to stay with me always, as his mother had told him to run away and not bother her! He had run away. I sent a messenger to his mother telling of his safety, and advised her to let him stay a while. We did not pet or fuss him, and before the day was out he thought he would be better off at home.

Then those dear "Bellairs boys," always happy if the big boy would show them his guns, etc., and Judge Smith's two boys who would arrive in immaculate white suits and tell me they had come to spend the day—surely never did two small boys play such pranks or get into the mischief they did. They would rarely go home till dark and then often in borrowed clothes, their own being too disreputable.

When bicycles became the rage mishaps were frequent and arnica and bandages were always ready. One high Church dignitary (now in a neighbouring island) had a nasty spill over burnt earth, and limped over to us to have his wounds dressed and his clothes mended that he might ride home decorously.

But the best of all our recollections is of a night when, the rain pouring in torrents and the roads under water, two Artillery officers and a private who had been dining with us were unable to get away. We had couches and a hammock, but only *two* grown-up sleeping suits. One, *which one* was kept a profound secret, had to don a long garment very lacy and frilly! Oh, the shrieks of laughter and picturesque language that we heard! One of these three is now in India, one in Africa, and the third a Government official in this colony.

The resources of our larder were often strained, especially on mail days, but never so much as on a day when my husband coming in to lunch, brought with him a party of 10 nuns and 4 priests (here in transit). One priest spoke a little English, the superior in charge of the nuns was French, and all the others spoke nothing but Dutch. They had landed after morning tea, had walked to the gardens, wandered round looking for somewhere to get a "piece of bread and cup of water." My husband told me he found them on the Avenue seats almost exhausted. Happily our stores had been replenished the day before and we were able to give them a simple lunch and, joy of joys, some lager beer. Of course, they expected to pay! But it was a good chance to pay off a little of the debt we owed Bishop Butler and *his* good nuns, and they went on their way blessing us and rejoicing. I have always found blessings like theirs very lasting in their effects. Indeed it was a saying in our household that *sometimes* "bread cast on the waters" came back *iced cake*.

Not always, though! In the days of the old "Barracouta" tourists often came to the house demanding refreshment, saying the men in the Gardens had told them they would get all they wanted at "Massa house." No matter what question was asked the labourers, or in what language it was spoken, they were ready with the same answer, "Go Massa house, talk Missie, she gwine help you!" Since the office has been at the entrance gate we had fewer visitors on tour.

Heavy trouble came upon us in March, 1894, when my eldest son, 2nd Assistant Analyst and Colour-Sergeant of the Militia, died of acute malaria after a few hours' illness. Less than a year afterwards my elder daughter, who had never recovered the shock of her brother's death, died of the same acute malaria after ten days' illness. Through the kindness of Bishop Butler she was tenderly nursed the whole time by the Sisters of the Convent of Mercy. I cannot write of this time except to speak of the sympathy shown us by all classes. The Government Botanist, Mr. Jenman, and his daughter lifted every possible burden.

In 1897 my younger daughter was married to Mr. John Williams of the Government Laboratory. So that the house in the Gardens holds the memory of births, marriage and deaths in our family. My two surviving sons are in the United States, but if ever they return to Demerara I am sure they will revisit the Gardens and their old home. They will see many changes, most, if not all, for the better.

I should like to write of the delight and pleasurable interest we all took in the progress of the Gardens, but it may all be recorded later. The nursery is full of beauty and we watched and waited for many a wonderful fruit or flower.

The last few years of our life in the Gardens, though only "we two," have been pleasanter and easier than we ever thought possible. But the intense loneliness began to tell on our nerves (often we have been the only people in the Gardens) till the night watchman was appointed.

We lived there 32 years all but one month, yet it was not with unmixed regret I heard our stay had been determined. I tried to make myself believe I should be glad to go, but it was a terrible wrench at the last. I left the Gardens at Christmas morning and my husband relinquished his position on the 31st December, 1913, after 35 years' continuous service.

It is a matter of surprise generally that we have decided to remain in the colony. Why should we go away? We have "troops of friends" here!

We have been to England and America at different times but are always glad to get back to Demerara.

We hope to re-visit both places, but we shall return undoubtedly. Have we not "eaten labba and drunk creek water?" And we shall be content to wait the traditional result and take our final rest in Demerara.

THE CONVERSION AND CHARACTERISTICS OF COLONY TIMBER.

By H. A. WISHART.

I had no idea that I was to undertake such a task when asked to record my experience and impressions of mill-sawing our colony-grown timbers with special reference to conversion of timber in the bush, which is likely to be necessary if the construction of a Railway to the interior is set about. As the scope of the subject under review is wide, it will be necessary first to refer to plant, power and best type of saw, after actual proof in practice, before turning to the peculiarities of some of our woods during and after conversion.

It might be well at the outset to give a short table of the timbers most commonly used and therefore frequently sawn, their recorded dry weight per cubic foot and grades of hardness.

TABLE.

Name.	Dry Weight per c.ft.	Weight Green.	Grade of Hardness.
Bullet Tree (<i>Mimusops Globosa</i>) ...	67½ lbs.	83	1 Compare Ebony.
Greenheart (<i>Nectandra Rolioei</i>) ...	75 "	81	2 ,, Boxwood.
Purple Heart (<i>Copaifera</i>) ...	49-62 "	2	" "
Suradani (<i>Hieronyma Laxiflora</i>) ...	49 "	3	" Blackthorn.
Mora (<i>Dimorphandra Mora</i>) ...	68½ "	81	3 " "
Wallaba (<i>Eperua Falcata</i>) ...	65½ "	3	" "
Silverbally (Brown) (<i>Nectandra Sp.</i>) ...	49½ "	3	" "
Keritee (<i>Nectandra Sp.</i>) ...	32 "	5	" Ash & Elm.
Crabwood (<i>Carapa Guianensis</i>) ...	39¼ "	52	6 ,, Beech.
Cedar (<i>Cedrela Odorata</i>) ...	32-47 "	7	English } " Birch. }
Simarupa (<i>Simaruba Amara</i>) ...	30 "	8	" White Pine.
Dallie (<i>Myristica Surinamensis</i>) ...	22 "	8	" " "
Plum (<i>Hymenoclea</i>) ...	57½ "		

PLANT AND MOTIVE POWER.

The decision, as to whether the saw-mill plant should be erected in either of the existing towns or the interior, is indeed a very important one and a great deal hinges on it towards success or failure. In the first place it determines what your motive power is to be.

Water Power. The site of erection of the up-country mill may happen to be so well selected that sufficient water-power may be obtainable in well-wooded timber forest. Undoubtedly this is the most economical force to employ provided the full supply of water is available during the dry season. Disposal of saw-mill waste refuse is, however, a little troublesome, unless separate plant is installed for making sawdust briquets, etc.

Suction Gas. Recent strides made in the production of suction gas have brought it into the field as a very formidable competitor with steam as a motive power.

The "Cambridge" suction gas-producer is a notable and important innovation, as one of its special advantages is that gas for running your mill can be generated from any description of saw-mill waste refuse which has a reasonable fuel value, including sawdust, plane shavings, bark, etc. Not only does this form the means of effectively disposing of waste refuse but plays an important part in the economical operation of the mill.

Electricity. Operating costs are reduced to a minimum if this force can be purchased as your motive power. I refer to purchasing the necessary energy for the reason that a central supply station can produce power more cheaply than it can be generated solely for running a saw-mill.

Considerable power is saved when machines are not actually employed on sawing. As against this steam and suction gas have to be generated and maintained between intervals for feeding and clearing the mills, also during temporary stoppages on account of small breakdowns. Disposal of waste refuse is also a question for consideration if electricity is used but can be handled in a similar manner to that suggested under Water Power.

Steam Power. Like the suction gas plant the furnace of the steam-boiler furnishes a ready means of disposal of refuse, but in addition, a small quantity of purchased wood fuel has to be used to supply the necessary steam pressure for driving the mills. Beyond the ordinary upkeep of boiler, feed-pump and steam-pipe lines, etc., there is nothing extraordinary to be maintained nor anything with which most people are not familiar.

STATIONARY SAW PLANT.

The town-erected mill pays about the same or a slightly higher rate for raw material as its up-country competitor and, provided that it is built on a riverside lot, there is no further trouble in handling raw material or the manufactured product. Accumulations of inferior grades of timber are soon disposed of for odd jobs in a town where there is also a ready market for all the mill's products. There is also a much larger field of labour to draw on and, although the labour might not be as skilled and intelligent as one would like it to be, the town-erected mill again has the advantage over its up-country competitor in this respect.

The carriage of hewn timber from the interior to a mill in Georgetown or New Amsterdam appears at first sight like great waste in the matter of transport charges on sawdust and what must eventually become mill refuse, if not used as before suggested. This is a point that has been sometimes urged in favour of the up-country erected mill.

A "sling punt," 40ft. long with a breadth of 9ft. and depth of 5ft., can carry with comparative ease from 4,000 to 4,500 cubic feet hewn greenheart logs, equal, respectively, to 143 and 160 tons at 28 cubic feet to the ton, if slung in the manner usually adopted. This seems marvellous for a craft of the dimensions mentioned, but it will doubtless be remembered that the weight of the timber is considerably different in water than in air. The method of slinging timber on a punt was recently fully described in the article on "The Timbers of British Guiana" published in the "West India Committee Circular."

It would be an absolute impossibility to load and stow the quantity of greenheart mentioned, if converted into planks, boards or scantlings, in a craft of the size referred to.

Transport charges on greenheart from river landing to a saw-mill in town range from 2 cents to 3 cents per cubic foot, dependent, of course, upon distance to be carried, and these figures also include the conveyance of the empty craft to the wood-cutting tract. The rates for freighting sawn greenheart timber by sailing craft or the coastal steamers are respectively 4 cents and 6 cents per cubic foot. For crabwood and other lumber of lighter grades the freight rates are \$3 and \$4 per thousand feet board measure, equal to nearly $3\frac{3}{4}$ cents per cubic foot. Crabwood and the lighter timbers which float are made up into rafts, and are transported down rivers at much smaller cost than greenheart. It will thus be seen that it is far more economical to transport raw material than is the case with the manufactured.

The up-country erected mill has the advantage, for a short time, of having but little transportation of raw material, but it is faced with costly transport of the finished product. In any case even if the finished article is offered for sale at the mill the purchaser must of necessity offer so much less to cover transport charges and loss in handling. Although the mill may be well situated at tidal water and convenient for ocean-going or other craft to load at the wharf for an export trade, one's trouble commences after cutting and accumulating grades of quality too poor for export but too good for the furnace, which it would not pay to transport to either of the towns for sale. Then, if not used as fuel, the destructive wood ants soon play havoc with the piles of softer woods.

PORTABLE SAW PLANT.

In view of the possibility of extensive constructional work in the interior consequent on the construction of railways and existing costly transport conditions, the first impression that strikes one is that portable sawing machinery should be installed for forest use. With the numerous waterways traversing our magnificent timber forests a pontoon with the necessary saw plant suggests itself in preference to a mule or ox-drawn vehicle. The latter type of portable plant, owing to its weight, does not readily lend itself to surmount the conditions and difficulties of the present accessible timber forest on the upper reaches of the rivers and creeks, in the swamps and marshy ground frequently encountered. The important

points to be borne in mind for a floating saw-mill are: Type of saw; design of plant and selection of makers; dimensions and draft of pontoon; stability of structure; minimum depth of creek or river where plant is to be operated, and local conditions to be met with.

TYPE OF SAW.

I now come to the very important point. What is the best type of saw to employ for the conversion of our colony timber? It is said that doctors differ; I may add, so do saw-millers.

The duty required of a saw for our variety of hard woods is necessarily severe and I shall touch on some of the saws in use locally.

THE CIRCULAR SAW.

Perhaps it is not generally known that the circular saw, whether with inserted teeth or solid plate teeth, is not suited for "breaking down" cuts, and it takes an expert at the job to get even one 1" board, of uniform thickness throughout from a 12" squared log, so far as our timbers are concerned. There are some excellent American circular saws with suitable appliance for holding the log in place during conversion, but these do not cut anything much longer than 16 ft. It is true the circular saw is a rapid cutter, but our timbers do not stand up well to high speeds owing to the tendency to split. The log band saw is replacing the circular for log conversion in many sawmills abroad. Nevertheless the circular saw and travelling rack bench has proved excellent for re-sawing up to thickness of 8".

I have seen a circular saw with inserted teeth at work on a certain mule-drawn portable plant in the interior here which eventually had to be abandoned. As a visitor, I have also seen an attempt made to cut boards from squared logs with a solid plate tooth saw, but without success. In this instance a little more set on the teeth would have reduced the friction, which was set up to such an extent that it was necessary for a jet of water to be constantly played on the saw. Such conditions took the temper out of the saw and considerably shortened its life for the reason that water was applied after considerable heat existed. It might have been slightly different had the temperature been kept down from the start.

Needless to say this last mentioned plant, also in the interior, is a "white elephant" as far as I know at the present time. An American once visited this concession with some capitalists he was showing around the country, and, typical of his nationality, wishing to impress upon them the wealth of our alluvial gold deposits, he informed them that this plant was kept for cross-cutting the gold nuggets recovered from the river bed, which were too large to be placed in the amalgamating barrel!

It is true that a circular saw with inserted teeth always remains the same diameter and runs at same rim speed; it might be also claimed to be cheaper, in spite of higher prime cost, as it outlasts many solid-tooth

saws. However, if the cost of new teeth for cutting a given quantity of timber be reckoned against the work done by a new solid tooth saw before it is discarded, figures would be found in favour of the latter. The class known as the solid plate tooth, with an average hook on the teeth and just enough to get a good grip of the wood, should be used as a matter of choice when a circular is required.

THE LOG BAND SAW.

This saw is undoubtedly a fine invention and highly suitable for the soft North American timbers. The question whether the vertical or horizontal log band saw is the more useful and quicker is still, however, a subject of controversy. I believe there are four of this type of saw in the colony, of which only one is constantly at work. It is, however, to my way of thinking, unsuited for sawing our timbers. In our hardwoods, which are generally required in long lengths, the saw does not and cannot work effectively at the required high speed, especially as the bulk of our timber is cut green. Running for a greater length than 16ft. with the high tension necessary for cutting hardwood, the great friction is prolonged and coupled with vibration of the band crystallization is set up. The crabwood logs at present procured for conversion are very small, from 8" x 8" to 20" x 20", this latter size but seldom, so the necessary power to run the saw is practically wasted on such small sizes, whereas with very little more power a 30" log could be put through and at the end of the day a fair footage would be shown as sawn. Even with crabwood I have seen the sawyer cooling off the saw with water on account of the high friction set up. A trifle more set on the teeth may overcome the friction trouble, but such horrid hard knots are frequently met with when breaking down greenheart timber that there is great liability of snapping your band if the kerf is increased. Fortunately, the mill I am now running has no log band saw, and I should not recommend it under present conditions.

THE LOG FRAME SAW.

Up to the present time the log frame saw has proved itself the most effective for conversion of the timbers of British Guiana, and, like most things, it has both its good and bad points, but with proper handling from four hundred and fifty to five hundred and fifty lineal feet of logs can be sawn in a working day of 9½ hours.

The overhead direct driven vertical log frame saw is highly suited for the manufacture of boards, planks and scantlings from our hardwoods and gives no trouble whatever during operation. One requires, however, to be very careful about the gauges of frame saws or webs, as they are technically termed, also set of teeth for soft, hard and gummy timbers, and more particularly that the correct hook on teeth and sufficient gullet are provided to permit the dust to recede and thus entirely free the point of tooth for cutting on the downward stroke.

OPERATING COSTS.

It might have been interesting to have given details of operating costs but for obvious reasons this is not advisable.

The present rate paid for hewing timber is from 3 cents to 6 cents per cubic foot at tree stump and for such "squaring" as it is. The timber hewn by local "squarers" engaged in the trade is generally waney and tapered. Sawing can also be done at the same rate as hewing if one has the right plant and power and provided that overhead charges are kept down to a minimum. The question of transport is, however, involved, but it is dealt with under "Portable Saw Plant."

INSPECTION.

Perhaps it is not amiss, before passing to the characteristics of some of our timbers, to touch upon the subject of inspection, for as far as an export trade is concerned, the lack of it is a serious and unfortunate setback to the timber industry of the colony, and therefore to successful milling operations.

Owing to the absence of the necessary machinery for carrying out Government inspection of sawn timber for export, it is a difficult undertaking to secure contracts on terms of inspection at port of shipment. On the payment of a fee, which, of course, would be a matter of arrangement between seller and buyer, it should be possible to get the required inspection carried out, and the necessary certificate given; then the supplier would be saved the expense of shipping rejected lumber which he might otherwise readily dispose of locally without loss.

It may probably be urged, against an apparent waste of public funds, in providing means for Government inspection, that the exports are so small as to preclude such a step. It is just here that the barrier to development and expansion lies.

Suppliers have to accept contracts for sawn crabwood, simarupa, greenheart and mora, subject to inspection at destination. As a consequence material considered satisfactory is shipped, but, naturally, the sawmiller has no wish to see his profits dwindle, and on the off chance of a certain piece passing muster, many pieces of timber are sometimes shipped that would not be if the suggested inspection was in force. Government inspection being independent would reduce to a minimum the possibility of the entire rejection of a consignment, which sometimes culminates in a subsequent offer by the would-be buyer rather than re-shipment resulting in a loss.

Lumber imported from abroad for use in the colony is, in some cases, subject to inspection at port of shipment, and in a similar manner when desired we should have the means of carrying it out.

It seems that much time has been and is spent by not a few in trying to get consumers interested in the less known timbers of the colony. In some measure the object is a laudable one, but more benefit would accrue to the timber industry if the better-known timbers, obtainable in quantity for commercial purposes, were more written about and advertised or kept prominently before foreign consumers in some such way.

BULLET TREE (*Mimusops Globosa*).

It is undoubtedly well known that from this tree is bled the balata of commerce. Owing to Government restriction of the felling of the bullet tree on Crown Lands there is a great scarcity of this timber as compared with former times when the embargo did not exist. Anyway supplies in small lots are sometimes obtainable from owners of private property on which such trees are to be found, as there is no objection to their removal.

This timber exudes a peculiar gummy substance during the process of sawing, which becomes troublesome to the sawyer if he is not familiar with sawing such wood. Bulletwood, as it is frequently called, is very close and straight-grained and genuinely tough; therefore it needs to be tackled with keen edged saws. Beyond a little precaution during milling there are no difficulties of an unusual character to be met with.

Lumber from this tree dresses up well and easily, takes a fine polish, and when well cured has the appearance of walnut.

GREENHEART (*Nectandra Rodioei*).

This timber has now become world-famous and needs no further description from me of its durability and other renowned qualities.

Although classed amongst our hard woods it is easily sawn. Owing to its straightness of grain and liability to split, logs should be entered slowly into the log frame mill and the feed gradually increased.

Special care is required to guard against splitting in re-sawing with a circular saw. As a high speed has to be developed with the circular if it is to perform its work in a satisfactory manner, the sudden jar at the point of contact with the wood causes the splitting, and in this respect the heavy circular gives the most trouble.

During cross-cutting it is not an uncommon thing to see the ends of the timber checking as the saw makes its way through, and frequently an iron clamp has to be used as a preventative until a wooden batten is nailed over the sawn portion.

An application of "Loracine" immediately smeared over the newly sawn surface undoubtedly prevents splitting. "Loracine" will not, however, stop or arrest a started shake and it is futile to attempt to stop it. Season checks are hardly visible if "Loracine" is properly applied and for months after no signs are seen.

The cause of wood splitting is easily explained if one takes into consideration the structure of timber and its condition when a newly cut transverse section is brought into contact with the air. As the pores lie principally in the direction of the fibres, the timber begins to dry up at its ends first, because the exposed pores give up their moisture very quickly, whereas towards the middle of the log the moisture remains much longer. The air which takes the place of moisture oxidises and

hardens the sap wood, which naturally hurries the drying-up process. As wood shrinks when it dries it is natural for the ends to contract transversely, and as the centre portion is still moist it cannot follow the pressure, so the consequent tension causes the trouble.

It is advisable and safe when sawing greenheart for export to increase dimensions by $\frac{1}{8}$ " for the subsequent contraction.

Greenheart turns and machine dresses well.

PURPLEHEART (*Copaifera*).

Purpleheart is graded as a fairly hard wood and is useful for all purposes where shock has to be resisted. Purpleheart has been used with success as a bed for the mortar box of a stamp mill of a now defunct gold mine in the colony.

Newly sawn boards rapidly become purple on exposure to sunlight and appear cured owing to the beautiful rich purple colour on the exposed surface only. Cured purpleheart boards after developing high colour in diffused light commence to fade after some months. Likewise do cured boards lose their colour if dressed, only to again recover it with the same process of fading as before described.

SURADANI (*Hieronyma Laxiflora*) and MORA (*Dimorphandra Mora*).

In appearance these woods are somewhat alike. As they are tough and cross-grained woods they sometimes give trouble during conversion if not handled in the right way.

Like bulletwood, they exude a peculiar gummy substance which crusts on the saw teeth; this causes sticking and with the friction set up the set is easily taken out of the saw.

The modulus of rupture of mora is 14,644 lbs. per square inch against 11,800 lbs. for pine, so it is quite unnecessary to have a sleeper of the same dimensions as that of pine or of such as obtains in practice of railway construction. Being a stronger, heavier and more durable timber than pine it cannot compete on favourable terms if sleepers of similar size have to be supplied for the reason that it is far more difficult to saw.

As mora is eminently suited for railway sleepers I have particularly referred to it at this point.

Sawn mora sleepers have been found, in actual practice, to be more durable than those of hewn timber. The dimensions of a sleeper are such that if required hewn suppliers in the interior would furnish mere saplings. It is true that only mature timber for sleepers should be demanded from suppliers and this will necessitate the felling of huge trees which would eventually have to be hewn down to size, so it would be more economical to have sleepers sawn.

WALLABA (*Eperua Falcata*).

This wood splits very easily and cleanly but soon becomes disagreeably sticky on account of the resinous substance it exudes. Sawn

wallaba shingles, vat staves and paling pickets are not as durable as those made from the split timber. Wallaba machine-dresses without difficulty and it presents a beautifully smooth surface. Vat staves dressed by hand soon become sticky

SILVERBALLY (BROWN) (*Nectandra Sp.*).

Although not as hard as greenheart and fairly easy to saw, silverbally is not as nice a timber to tackle from the sawyer's point of view. This wood machine-dresses and turns well and really offers no difficulty to the workman. Owing to its great elasticity brown silverbally yields readily when planking a boat or when used in similar manner.

For some reason or other this wood is not beloved by the insects and vermin so fond of destroying clothing and books, and although a bit on the heavy side, and possessing no beauty for furniture, I have seen brown silverbally used to advantage in the making of a wardrobe and book-case.

KERITEE (*Nectandra Sp.*).

During the sawing process this wood gives off a strong odour resembling that of *cedrela odorata*, but soon loses it after a few days' exposure to the air. It is much used for purposes similar to those to which silverbally is applied.

CRABWOOD (*Carapa Guianensis*).

Owing to the great demand for crabwood it is sawn particularly green and more so than any other of our timbers. The frame saw soon makes short work of crabwood, but one does not realise how difficult it is to saw by hand when green until attempted with the ordinary bench saw. Unless an unusual set is put on the teeth one would never get through the piece with a dozen trials, and it is amusing to see the novice at the job.

Unfortunately crabwood has a peculiar and most annoying tendency to split, and more so when cured to the "bone dry" point than in its green state. For this reason carpenters, when on a contract job, do not as a rule like to use it, as a gimlet has to be frequently employed before a nail is driven.

As described under greenheart, Loracine has been used with good effect, especially on the ends of planks. These ends failed to shew up any signs of season checking even when the scab of this wood preservative had been removed some eight months afterwards.

The worthy gentlemen of the saw also object to use scantlings of crabwood because they warp. If entirely submerged in water for a few days there is no difficulty in working scantlings of crabwood into the required places without the aid of union screws, clamps, etc.

Scantlings from most of our timbers do certainly warp unless the required size is taken down the centre of the log. It is, however, inadvisable to adopt such a method with small sizes, from 6" x 6" down-

wards, if economical conversion is to be rigidly carried out. In order that the consumer may feel more satisfied such means have to be used as to preclude, as far as practicable, the liability to warp.

Of course no definite rules can be laid down for the conversion of timber, but in practice it has been found that the best course to pursue is that of selecting such logs as may be worked up into the required sizes with as little waste as possible, then square them and break down into planks of a given thickness. After placing these planks aside for some months, properly stacked and sticked, on re-sawing to width required, one is rewarded with straight scantlings.

Crabwood is best dressed by machine when green and it is surprising how quickly it splits when cured during the process of dressing by machine, or rather unless cured in a special manner, which will be described later. This lumber, simply thrown down anyhow to cure, warps in all forms and ways, especially across the face. It begins to split when the feed rollers of the plane are brought to bear on the particular piece, practically flattening out the protuberance, the cutters next completing the splitting owing to the high speed at which they strike the surface being planed.

In the absence of an artificial timber dryer the method for curing, when stacking in pile, should be by "sticking." By "sticking" is meant the placing of strips, of such length as are equivalent to width of boards and from 1" to 1½" thick by 1" wide, at distances of three feet apart, along the surface of the board after having started the first tier on good dunnage, set equally apart in a dry and airy place. Expensive method though it may be, entailing great care and additional labour, it will well repay the producer to give entire satisfaction to the consumer, especially the cabinet maker, by supplying cured lumber.

I regret that I am not in a position at the present moment to include in this paper the results of "girdling" some crabwood trees a year ago, and the subsequent action of the timber when being sawn.

CEDAR (*Cedrela Odorata*).

This timber has no peculiar feature during or after conversion and is so well known that it calls for no detailed description from me. The same method of stacking for curing should, however, be adopted as described under crabwood.

SIMARUPA (*Simaruba Amara*).

This is one of the simplest timbers to saw and it can be dressed without difficulty either when green or cured. No delay should, however, take place in converting logs into boards so soon as received, for the wood becomes quite discoloured and rots if left on the timber flat for any time, especially if tidal water comes into contact with it.

DALLIE (*Myristica Surinamensis*).

Like simarupa this is the timber of another sap-wood tree. When quite green dallie is somewhat gummy and but for the fact that it is so soft sawing would be troublesome.

CONCLUSION.

After consideration of the points raised and the means of operating suggested for the conversion of colony timber, it might be well to state in concluding this paper that as a matter of choice I would select the town erected saw-mill with a suction gas plant running vertical frame saws.

NOTE.—Crabwood has this tendency to split when nailing in common with mahogany, some birches, and other close-grained timbers when thoroughly cured. Square-pointed nails drive better than sharp wire nails, which act like wedges. I have found *soaping* more or less successful in driving the latter sort of nail when the necessity of affronting with it a fine timber like crabwood arises.—ED.

A LIST OF THE INSECTS AFFECTING SUGAR-CANE IN BRITISH GUIANA.

BY HAROLD W. B. MOORE.

LEPIDOPTERA.

1. *Castnia licus*, Fabr.

Common name : The large or giant moth-borer.

Injury : The caterpillar bores or tunnels the underground portion of the stools and the lower joints of the cane-stalks ; and kills the " heart " of young cane.

Natural enemies :

Caterpillars preyed on by larva of an Elaterid beetle, *Pyrophorus* sp.

Adult moths preyed on by several birds, including the Old Witch (*Crotophaga ani*), the Kiskadee (*Pitangus sulphuratus*), and certain hawks.

2. *Diatraea saccharalis*, Fabr.

3. *Diatraea canella*, Hamp.

Common name of 2 and 3 :—The small moth-borer.

Injury : The caterpillars bore the young cane, thus killing the heart : also bore or " ring " the stalks of older cane. Their attack greatly reduces the purity of the juice.

Natural enemies :

Eggs parasitized by *Trichogramma minutum*, Riley, and by *Prophanurus alecto*, Cwfd., n. sp.

Eggs, both parasitized and unparasitized, destroyed by an undetermined species of mite (Acarid), and two undetermined species of ants.

Caterpillars parasitized by the Braconids *Iphiaulax medianus*, Cam., *Iphiaulax*, sp., *Cremnops parvifasciatus*, Cam., *Cremnops* sp., by the Ichneumonid *Mesostenoides* sp. ; by the Chalcidid *Heptasmicra curvilineata*, Cam. ; and by an undetermined Dexiid fly.

Caterpillars preyed on by larva of a Carabid beetle, and, if wandering, by a big black ant (undetermined) known as the " kop-kop," and by Attid spiders ; also by the larva of an undetermined Elaterid beetle, by the Histerid beetle *Lioderma 4-dentatum*, and by the larva of a Stratiomyiid fly.

Caterpillar and pupa attacked by a fungus, probably *Cordyceps barberi*, Giard.

4. *Syngamia cassidalis*, Guen.

Injury : Caterpillar eats leaves of young cane.

Natural enemies :

Caterpillars parasitized by a Tachinid fly, and preyed on by *Odynerus clarilinatus*, Cam., a mud-daubing wasp.

5. *Laphygma frugiperda*, S. and A.

Common name : The rice worm.

Injury : Caterpillar eats leaves of young cane, and is often found in the throat of the shoots.

Natural enemies :

Eggs parasitized by *Trichogramma minutum*, Riley.

Caterpillars parasitized by the ichneumon *Enicospilus guyanensis*, Cam., and preyed on by the Coccinellid beetle *Megilla maculata*, de Geer. by such wasps as *Polybia nigriceps*, *Polistes canadensis*, and *P. carolinensis*, also by several birds and the common toad or crapaud *Bufo marinus*.

Adult moths preyed on by Attid spiders.

6. *Remigia repanda*, Fabr.

Common name : The grass looper.

Injury : The caterpillar eats leaves of young cane.

Natural enemies :

Caterpillars eaten by several species of birds.

7. *Cirphis latiuscula*, H.S.

Injury : The caterpillar eats the young leaves.

Natural enemies :

Caterpillar parasitized by a Tachinid fly.

8. *Prodenia latifascia*, Walk.

Injury : The caterpillar eats young leaves.

9. *Lycophota infecta*, Ochs.

Injury : The caterpillar eats young leaves.

Natural enemies :

Eggs parasitized by *Telenomus atripes*, Cam.

10. *Monodes agrotina*, Guen.

Injury : Caterpillars feed on exposed parts of cane stools after canes have been cut, also on shoots at parts injured by the small moth-borer.

Natural enemies :

Caterpillars parasitized by a Tachinid fly.

11. *Acrolophus sacchari*, Busck, n. sp.
Injury : The caterpillars live underground, infesting poor stools, especially such as are affected by drought.
12. *Halisidota strigulosa*, Walk.
Injury : The caterpillar eats the leaves.
Natural enemies :
Caterpillar parasitized by an ichneumon, a species of *Enicospilus*.
13. *Caligo iloneus iloneus*, Cramer.
Injury : Caterpillar eats leaves.
Natural enemies :
Eggs parasitized by a small hymenopteron. A large Chalcidid has been bred from the pupa.
14. *Taygetis andromeda*, Cr.
Injury : Caterpillar eats leaves.
15. *Perichares corydon*, Fab.
16. *Xeniades chalestra*, Hew.
17. *Prenes vala*, Mabille.
18. *Prenes ocola*, Edw.
19. *Prenes ares*, Feld.
20. *Lerema accius*, Abb.
21. *Lerema mooreana*, Dyar, n. sp.
22. *Atrytone heberia*, Dyar, n. sp.
23. *Atrytone gladolis*, Dyar, n. sp.
Common name of 15 to 23 : Skipper butterflies.
Injury : Caterpillars eat leaves.
Natural enemies :
Chalcis annulata has been bred from pupa of *Perichares corydon* ; a *Zelomorpha* and an undetermined Braconid from the caterpillar of *Prenes ocola*, and a *Joppa* from pupa of same ; and undetermined Braconid parasites from *Lerema mooreana* and *Prenes vala*.
Caterpillars of *Prenes vala* preyed on by those of *Laphygma frugiperæ*.

COLEOPTERA.

24. *Xyleborus* sp.
Common name : Shot-borer.
Injury : Larva infests diseased and souring cane.

25. *Dyscinetus bidentatus*, Burm.
Common name : The small black hardback.
Injury : Adult beetle bores into young shoots near the base and kills the "heart." Larvæ feed underground at the stools.*
26. *Cyclocephala signata*, Drury.
Common name : The brown hardback.
Injury : As the small black hardback.
27. *Phileurus bajulus*, Perty.
28. *Strategus alæus*, Fabr.
Injury : Larvæ of 27 and 28 feed underground in or about cane-stools.
29. *Rhyncophorus palmarum*, Linn.
Common name : The palm weevil or gru-gru worm.
Injury : Larva infests cane-stools.
30. *Metamasius hemipterus*, Linn.
Common name : The lady-bird weevil borer.
Injury : Larva follows mechanical injury, or injury by other insects, or by rats, or follows rind fungus. Infests growing cane and plant-tops.
Natural enemies :
Larva parasitized by a Braconid, probably an Iphiaulax.
Adult beetle preyed on by *Mallophora calidus*, one of the hawk-flies (Asilidæ), and by the Argiopid spider *Argiope argentata*, Fabr.
31. *Myochrous armatus*, Baly.
Injury : Larva attacks tender leaves generally found in throat of young shoots.

 COCCIDÆ.

32. *Aspidiotus sacchari*, Ckll.
Common name : The root-scale or sugar-cane Aspidiotus.
Injury : Feeds generally underground on stools and roots, often forming very thick incrustations ; often found, too, on the cane-stalks,
Natural enemies :
A small hymenopterous parasite, undetermined.

* I have just discovered that the hardback larvæ are parasitized by the larva of a small black wasp, of the family Scoliidæ.

33. *Pseudococcus calceolariae*, Mask.

Common name : The pink mealy-bug.

Injury : Feeds below sheathing leaves when canes are jointing or jointed ; otherwise feeds at base, just where they originate from stool or plant-top ; often found, too, below ground on stools, plant-tops, and roots.

Natural enemies :

A fungus *Aspergillus* sp., the Coccinellid *Hyperaspis trilineata*, Mul., and one or two others, an undetermined lace-wing fly (Chrysopidæ), an undetermined Tineid moth, and an undetermined Cecidomyiid fly ; also an undetermined Chalcidid parasite.

34. *Pseudococcus sacchari*, Ckll.

Common name : The grey mealy-bug.

Injury : As for 33, the pink mealy-bug.

35. *Pulvinaria* sp.

Injury : Feeds on young leaves.

Natural enemies :

A small hymenopterous parasite, undetermined.

36. *Orthezia insignis*, Douglas.

37. *Orthezia praelonga*.

Common name of 36 and 37 : Croton bug.

Injury : Feed on leaves.

38. *Pseudococcus citri*, Risso.

Injury : Feeds on roots, stools, and plant-tops.

HOMOPTERA.

39. *Tomaspis flavilatera*, Urich, n. sp.

Common name : Frog hopper or spittle-insect.

Injury : Feeds on roots.

Natural enemies :

Preyed on by Attid spiders.

40. A Leaf-hopper (undetermined.)

Injury : Feeds on leaves ; also injures them in act of oviposition.

Natural enemies :

Eggs parasitized by a small hymenopteron.

41. *Proarna germari*, Dist.

Common name : Cicada or small 6 o'clock bee.

Injury : Larvæ and nymphs feed underground at cane-stools.

NEUROPTERA.

42. *Eutermes costaricensis*, Holmgr.

Common name : The common sugar-cane wood-ant or termite.

Injury : Feeds on stools injured mechanically, or by other insects, such as *Castnia*, the small moth-borer, and the weevil-borer, or stools badly affected by drought; feeds also on cane-stalks, following attack by the small moth-borer.

Natural enemies :

Kop-kop ants, and, when swarming, preyed on by the wasp *Polybia occidentalis*, by birds, and spiders.

43. *Mirotermes nigritus*, Lilv.

Common name : The black wood ant.

Injury : Attacks cane-stools.

ORTHOPTERA.

44. *Conocephaloides maxillosus*, F.

Common name : The green grasshopper.

Injury : Feeds on young leaves.

Natural enemies :

Eggs parasitized by an undetermined hymenopteron.

Winged insects preyed on by the Sphegid wasps *Sphegichneumon* and *Chlorion (Proterosphegichneumon) neotropicus*; also by the Argioid spider *Argiope argentata*, and Attid spiders.

45. *Schistocerca pallens*, Thunb.

Common name : The brown grasshopper.

Injury : As for 44.

Natural enemies :

Argiope argentata, and Attid spiders.

APHIDIDÆ.

46. An undetermined Aphid or plant-louse.

Injury : Feeds on young leaves.

The above list has been drawn up chiefly from my own notes, although a number of the records are those of Mr. Quelch and Mr. Bodkin, the Government Economic Biologist.

SOME COLONY BIRDS.

BY REV. CHARLES B. DAWSON, S.J., M.A. (Oxon.)

PART II.

As I concluded my first article (Dec., 1912) by a description of the Twa-twa, I may well take up the thread again by giving some account of its near relative the Tua-tua. The Tua-tua (pronounced tower-tower) (*Oryzoborus torridus*), vulgarly called the bastard twa-twa, or the Twa-twa's slave, proclaims at once its near kinship to the Twa-twa. It is, however, neither so large nor so elegant in form; and moreover, from the lower part of the breast to the tail, it is dark red. From this feature it evidently derives its specific name of *torridus*, toasted or scorched. I suppose it derives its vulgar name of bastard twa-twa from the mistaken notion, that it is a cross between that bird and some other inferior type. In nature, however, hybrids never occur. I suppose again that it is called the twa-twa's slave on account of its comparative inferiority.

It has a large beak, though not so relatively large as the twa-twa's, and being black instead of slaty white is not so conspicuous. There is a white stripe on the primary feathers, but it is almost covered by the wing coverts. The wings underneath are white also. It has the same habit of whisking his tail from side to side and of spreading it out; and the tail is full and broad: I had almost said bushy. As in the case of the twa-twa, the hen and the young birds are a warm brown, darker on the wings and tail; it is thus almost indistinguishable from several other brown hen finches; but the beak which has a ridge or keel where it joins the skull above, is unmistakable. The single note of the Tua-tua is exactly that of the twa-twa, and its song, though not so loud, is perhaps more musical. But it is not such a persistent singer.

It is an amiable aviary bird and the one in my possession returned to the cage when I chanced to let it escape:

THE FIRE-FINCH.

One of the most beautiful of our finches has the awkward name of "Scarlet-crested finch" (*Coryphospingus cristatus*). I prefer to call it the *fire-finch* and it justifies this title, being very much the colour of a smoldering ember. In size it is not so large as our sparrow; but it is much more graceful in form, hence its generic name, *coryphospingus*, Greek, "the small slender bird."

The body of the bird except the back is a dull crimson-lake, merging into pink at the throat; the back, wings, and tail, are dark warm brown. Around the eye, in lieu of eye-lashes are tiny pinkish, almost white feathers which give the bird the air of wearing spectacles. The crest, which however he seldom erects, is in the shape of a half-

closed fan, with the broad side in front; it is bright, silken, scarlet, with the outer edges almost black. Its note is a long, indrawn, almost hiss-like, monotone: *ts—s*. Its song, though it rarely sings in a cage, is a see-saw on two notes and can hardly be called beautiful. But its colour and lively disposition make it a desirable cage-bird. It is never seen in a cage, however, for the people of the colony think a bird "no good unless it can sing, sir."

It has a pleasing habit of springing up perpendicularly and dropping down again like a bouncing ball; or of throwing itself upwards towards the bars of the cage, clinging for a moment, and then flinging itself back again. A pair I had would sit for a long while by the side of a small mirror, and seemed very annoyed when a pair of small doves took up that position; they would go up to them and try to hustle them out of the coveted spot.

Coryphospingus is not easily tamed though when once kept in a cage will generally return when set at liberty. It is charming when caught in the hand, erecting its flaming crest and uttering cries of protestation. The crest when at rest is simply a streak of bright crimson.

The hen is a modified replica of the cock and has no crest.

The fire-finch is not uncommon in town, but being very shy is not often observed.

THE CREOLE CANARY.

The creole canary, or canary grass-bird (*sycalis arvensis*) is very like that variety of the domestic canary which in England we call the "lizard," though much smaller; and I venture the opinion that it is, indeed, the ancestor of the now world-wide favourite cage-bird. Above, its feathers are olive-brown edged with lighter colour and not unlike those of the English sparrow; its throat, breast, and vent are a slightly-greenish yellow, as also above and below the eye, merging into a greener tint on the cheeks. The hen is the same but not so bright. It readily becomes tame in a cage (which is another argument in favour of the above theory) and breeds freely. A cock bird I have in my aviary made love to a hen *tua-tua* and I have no doubt they would have gone to nest had I put them in a cage by themselves. But I dislike hybrids of every kind. Its wooing was delightful. It would fly from side to side of the aviary and remain before its beloved object on suspended wing like a heavy humming bird, and all this time would utter loud notes of self-admiration as if to say, "*Look at this, look at this! See what I can do!*" Then it would alight and pour forth its song. The song, though lively enough, is stereotyped. It might easily be reproduced in a mechanical toy. It is wanting in variety and its gamut is short. Beginning with a few staccato notes it gradually increases the pace, rising by semitones; then it trills, still increasing the pace; then ends abruptly as if out of breath. But it begins again immediately for it is an incessant singer when it once takes up its song. In a cage with other birds it is interfering and inclined to be masterful. It should therefore be kept alone.

THE WHITE-THROATED FINCH OR RING-NECK.

The white-throated finch or grass-bird (*spermophila lineata*), commonly called the Ring-Neck, is the largest of three black-and-white finches often mistaken for one another. Rightly are these small finches called grass-birds (*spermophila*, seed-lover) for they feed exclusively on the seed of the larger kinds of grasses, plucking the seed as it grows on the stem and often performing many amusing acrobatic antics in the process. Unlike most other finches they even feed their young on the same diet, having however partly digested it in their own crop. Most other finches, as well known, feed their nestlings on insects, and thus our common house-sparrow got itself transported to happier climes by those who had that amount of nature knowledge which proved a dangerous thing, in the hope that it would clear the land of insect pests. Alas, in these happier climes, it devours more grain in harvest time than is compensated for, by its insect destroying propensity in the nesting season; and it increases apace.

The White-throat or Ring-Neck is a stumpy bird with a large head; it is like a cock-sparrow in form though generally smaller. The head, back, wings, and tail, are dull black; the throat, white: the breast, vent, and rump, light grey. There is a ring of white running from the ends of the throat feathers around the neck and broadening on the shoulders, but not meeting at the back. It is almost as if he had a white beard the ends of which were blown over the shoulders. The white feathers of the throat do not quite merge into the grey of the breast, there being ridges of black feathers from the shoulders and almost meeting as they taper to a point in front. There are also two stripes of white across the upper part of the wings: the first, along the upper wing coverts; and the second across the lower wing coverts and extending along the bases of the primaries as far as the second feather. The hen is a uniform olive-brown, darker on the wings and tail. There is a light brown bar on the wings corresponding to the upper white stripe of her mate. It is distinguished from all other brown hen finches by the shape and colour of the beak, which is black, blunt and rounded, like a typical Jewish nose.

The song of the white-throat is a bubbling cascade of music, sweet and melodious. This fully compensates for its inelegance of form; and he is a continual singer. It is extremely fond of a bath and, I may say, of cage life, for it will return again and again if set at liberty. He is amiably disposed toward other birds; but, of course, does not sing so persistently as when kept alone. Many song birds in an aviary will not sing at all.

THE MOUSTACHE FINCHES.

There are two species of these birds, so-called from the more or less moustache-shaped lines of white running from the corners of the mouth. They remind me rather of mutton-chop whiskers. In length they are a little less than the white-throat, but they are beautiful in shape, being slender and having a longer and more shapely tail; the head also is small and neat.

The commoner species is the *Spermophila lineola*. In this, the head, wings, throat and tail are velvet black; the breast, greyish white, fading into white on the vent. Besides the so-called moustache, there is a white bar running along the crown of the head from the beak, and a small white patch on the wings, that is, on the upper part of the primaries. The under-wings are white, and the secondaries are partly white, though the colour does not appear externally; the rump is grey. The hen is a light olive-brown, lighter still below; the beak, horn colour and not black.

The single note of the bird is loud and like the chirp of a sparrow; but it has a pretty song of about fifteen notes; not, however, so varied as that of the white-throat. It is a charming cage-bird, easily tamed and amiable in disposition.

The other moustache finch (*Spermophia ocellata*) is much rarer and is not distinguished by the uninitiated from the foregoing. However, it is not so slim; there is no line of white over the head; and along the sides are round spots upon a ground of black fading into grey. From this latter feature it derives its specific name of *ocellata*, that is, "eyed" or marked with eye-like spots.

THE BLACK-THROATED SACKI.

There are several species of tanagers rightly named *euphonia*, "sweet-voiced." The smallest (*Euphonia minuta*) is a tiny bird hardly three inches in length, from tip to tip of beak and tail. The tail of all these birds is short, extending very little beyond the under-tail coverts, and their general contour is swallow-like, being round and full. The head, back, wings and tail of the *minuta* are deep blue, with a green sheen on the primaries; the throat is deeper blue rather than black. The breast is a rich yellow, the under-tail coverts white, as are also the under-wings. The forehead is yellow and gives the bird the air of wearing a jockey cap with a square peak turned back. The bill, more like a swallow's than a finch's, is slaty blue. The sexes are alike, or nearly so. The bird soon becomes accustomed to a cage for, in spite of its small size, it is very intelligent and fully alive to the fitness of things. Held gently by the feet and stroked on the back, it may be trained to pour forth its musical song: *chic-chic-cheek-cheek*. It has a loud note for so small a bird. Its ordinary song sounds something like this: "*thet-thet-thit, thit, thet, wee, wee, chic-chic, are you going away? don't go away, don't go away!*" and all the while it flips its wings and turns from side to side. It is, of course, a fruit-eating bird and thrives on yellow plantain. I should prefer to call it the Jockey-sacki.

THE BUCK-CANARY.

Euphonia violacea, or the Buck-canary as it is vulgarly called, or in more polite society the Louis d'or, is much larger than the black-throat, being fully four inches, bill and tail included. Like *minuta* it is blue above and yellow below, but the yellow extends from tail to beak and the yellow of the forehead is rounded above. The hen is a dull

green, lighter below. Though it is called *violacea* there is no violet about either sex. Like its smaller cousin, it is a charming bird and readily takes to cage life. A pair I once had actually fed two callow cashew-sackis which I put into their cage having no other at hand at the moment. They did it in a business-like way, eructating the food from their little throats. Unfortunately they took toll in the shape of feathers. I was surprised to see the young birds becoming bare on neck and back, and more surprised to see their foster-parents by turns deliberately and calmly pluck out the feathers and after turning them about in their beaks for a while swallow them!

Closely allied is the *Euphonia cayana*, or Yellow-sided Sacki; being of the same size and form, but in colour a uniform dark, steely blue with a yellow patch of feathers on each side of the breast, partly covered by the shoulder of the wings. It is much rarer and is seldom obtainable. I have only seen one specimen in a cage. I am told that its habits are exactly similar.

THE YELLOW-VENTED SACKI.

Allied to the charming *Euphonia* is a group rightly called *Calliste*, that is, beautiful. I described one of them in my former article, the *Calliste cayana*, or black-faced tanager. Among these, the *calliste flaviventris*, or gold-finch as it is erroneously called, ranks high in point of beauty. I doubt whether it ever ventures into Georgetown being shy and retiring in its habits. I first saw it in the garden of the Rest-house at Pickersgill in the Pomeroon River, and obtained a specimen that was caught at Malgretout. It lived contentedly for several months in a cage and might still have been alive but for the carelessness of a servant.

The bird is smaller than the blue sacki, being only four-and-a-half inches in length. The head, throat and rump are purple; the back, wings and tail, velvet black; the black of the back extends in a peak to the top of the head with pleasing effect. The breast and belly are bath-brick yellow and there are two irregular chains of spots or rosettes along the sides but almost covered by the wings. The shoulders of the wings are half-moons of bright turquoise blue, changing into emerald green in certain lights; and along the lower border is a scalloped edging of purple, the centre of each scallop being jet black. The general appearance when it flutters about the cage is so butterfly-like that I venture to call it Butterfly-wing in preference to the Yellow-vented Sacki!

The only note I have heard it utter is a pretty *link-link* like the jingle of a silver chain.

Flaviventris is as amiable as it is beautiful. When I introduced a palm sacki into its cage as companion, my butterfly-wing evinced the greatest signs of pleasure, flitting about, uttering its pretty note, and caressing the stranger with its bill. It was a case of Beauty and the Beast for the sacki was one of the dirty-greenish-brown variety.

MOCKING-BIRDS OR HANG-NESTS.

The Mocking-birds are, like the tanagers or sackis, allied to the finches; unlike them however, they have affinity with the Starlings and with the Mynas of India; and this latter affinity is more apparent. The way in which they stalk about and pry into other people's affairs betrays at once their starling character. Let me say at once that though these birds well deserve their name, they have no affinity with the Mocking-bird of North America.*

I have been fortunate enough to rear several yellow-back mocking-birds from the nest. It is difficult to do so. All kinds of food must be offered and much patience and skill is required in administering it; for they have a wonderful way of ejecting what they have received, as well as of rudely declining the choicest viands. Sometimes I have had to do what the Government at home has been so much blamed for doing in regard of the obstinate hunger-strike suffragette. I have had to forcibly feed them. It is some time before they become accustomed to eat what one can supply them in place of the seeds and insects of their native habitat.

THE YELLOW-BACK

The Yellow-back Mocking-bird (*Cassicus persicus*) is a splendid fellow. Fully nine inches in length, he is glossy black with the exception of the rump, vent, and under-tail coverts, which are golden yellow; there is also a longitudinal bar of yellow on the wings. The feathers are trim, sleek and hard. The slightly curved bill, an inch-and-a-half in length, is also yellow and the upper beak or maxilla is joined to the forehead by a rounded projection after the manner of the beak of a mediæval helmet; hence its name *Cassicus* from Latin *cassis* a helmet. A striking feature is the eye, the iris of which is bright blue. His gait is stately and altogether he has a military bearing. The hen is like her lord but much smaller.

Yellow-backs live in colonies and at nesting time much noise and racket goes on. The nests are wonderful structures of dried palm-fibre woven with great skill, and hung from the ends of the branches of a tree, in size and shape like Indian clubs. The eggs, two in number, are dull white with a few small dots or lines of purple-red. They are comparatively small, being only the size of starlings'. The name of "hang-nests" given these birds is by no means discriminative, for many birds in the colony build nests after this fashion. The ordinary cry of the bird begins with a sound like the creaking of a bough in the wind, and changes into the hollow sound of a Swiss cow-bell.

A high thorny tree is generally chosen for their colony; but not always so. At the Catholic Mission ground at Morawhanna is a large colony on a small mango tree. Do these birds realize that the land all about is marshy and that, in consequence, the tree is almost unapproachable? It would seem so.

*NOTE.—The real Mocking-Bird is the *Mimus polyglottus*, a grey bird the size of a large thrush, with affinities both to thrushes and wrens.

By an infallible instinct these birds always choose a tree on which marabuntas or fierce ants, or both, have already established themselves. The marabuntas nests often hang among those of the birds; but there seems a perfect truce between them. The male bird at home cuts a ridiculous figure. Standing in a prominent place, he lowers his head and tail, and ruffles up the yellow feathers of his back and all the while he cries in hollow tones: "*Just look at me! Just look at me! Don't you admire? Am I not fine?*" He waits a little while for admiration, and then begins again.

He well deserves the name of Mocking-bird, for there is no bird in the forest he will not imitate, and thus often deceives the sportsman and specimen collector.

Some time ago in the North West District, I had occasion during a missionary journey to spend a night at the Rest-house at the mouth of the Baramani River. I had no sooner showed myself at the window than I was subjected to a noisy badinage from, as I supposed, a number of birds on a tree close by. "*Hi, hi! ah! ah! ya-ah! What are you doing there?*" The voices seemed to say, "*I don't like the look of you at all! Go away! We don't want you—aha—yah—yah!*" I looked in amazement. There was only one yellow-back, perhaps some old bachelor, but he was skipping from branch to branch and pouring out his full vocabulary from different coigns of vantage.

The yellow-back makes an attempt at a song; but it is more interesting than musical. There are mutterings and splutterings, whisperings and gurglings, and occasionally a full round note; but the whole is not inspiring. It is like a clown trying to be sentimental. But he is worth domesticating on account of his beauty and knowing ways. One I have now will do what in gymnastic language I must call the hand-grind—a bird's feet are partly hands—he will swing round his perch, holding on by the feet, in the vain endeavour to catch his tail! His feet are large and powerful. I am told he can be taught to speak. Mine will sometimes bark like a dog on the approach of a stranger.

THE RED-BACK.

The Red-back mocking-bird (*Cassicus affinis*) is closely related in form and habits to the yellow-back. It is, however, entirely black with the exception of the rump which is rich, bright, crimson: the colour of red port-wine seen against the light. The black feathers have also a blue sheen. It is rarer and shier than the yellow-back and is not so intelligent. I have never seen it in a cage. A couple I tried to rear did not thrive; but the conditions were difficult.

It has a long, swift flight, and then the crimson of its back gleams out. It may sometimes be found sharing the colony of the yellow-backs; but the two never inter-breed. Nature abhors mixed marriages of all kinds.

THE BLACK MOCKING-BIRD.

I found in the North West District a bird I have not yet been able to scientifically identify, but which is known locally as the Black Mocking-bird. It is smaller than the foregoing and is entirely black. It congregates in great flocks by the waterside making a great chattering: but builds its nest alone. I have found a great number of these nests up the creek at Morawhanna. They are woven of black roots or fibres and adorned with lichens and mosses; in shape they resemble a basket, and the handle is simply slung over a branch. The eggs, four in number, are white, covered with red spots. I secured a nest of young ones and succeeded in rearing them. They were amusing creatures, shaking themselves prodigiously when being fed, and uttering surprisingly low-toned cries: cries that seemed to come from their boots, so to speak. The note of the old bird is loud, piercing and bell-like and when once heard in the creek is not easily forgotten. Unfortunately I had to leave the district before these young ones were fully developed and was unable to carry them away with me. There are no specimens or skins of this bird in the Museum.

THE GREAT RICE-BIRD.

Allied to the Mocking-birds, but more closely so the Lazy-bird, described in my last article, is the Great Rice-Bird, (*Cassidix oryzivora*), that is "the great cassique rice-devourer." This bird is as large as an English crow and as black; but it is more graceful in form with its slim body and dainty head. The beak is black, trim, and conical; the maxilla is rounded where it joins the skull, but not so prominently so as in the yellow-backs, etc. The eye is red. The sexes are more or less alike. The male is glossy purple-black; but has not the satiny sheen of its diminutive relative, the Lazy-bird, or, as it is known in scientific circles, the Common Rice-Bird. The hen has the same cuckoo habit of placing her eggs in the nest of another bird. The egg is like that of our English thrush, but twice the size. A beautiful cock bird I had, was taken, by mistake, from the nest of a yellow-back and reared by hand. When it could fend for itself, it made its home among the domestic fowls. It fed with them, fought with them, and after flying about all day, would roost with them at night. It would cluck like a hen and crow like a cock, and was so taken up with its novel companions that it never more showed any affection for the hand that had fed it in callow youth. I kept it in a large cage, but it never grew tame. When, however, a fowl approached, it would show an affectionate concern, clucking and spreading out its feathers. As its specific name implies, it feeds exclusively on grain, showing a preference for paddy which it husks like a finch! Mine had the ingenuity to open the lid of its seed-box and thus save itself a good deal of trouble.

THE GUIANA BLACK-BIRD.

The Guiana, or Demerara black-bird (*Quiscalus lugubris*) is the size of the bird so named in England and is as black, but otherwise has nothing in common. It has, in fact, all the habits of a Starling. It is glossy, dead-black, the only relieving colour being that of the eye which

is almost white and gives the bird a ghostly look. As there are in the colony at least ten other birds entirely black, it is singularly misnamed. I propose to call it the *Rudder-tail* from a curious feature of that appendage which I will describe. The tail which is fairly long, opens out like a fan, and when it flies, the middle feathers drop a little and in consequence the tail seems to have assumed a perpendicular position like the rudder of a boat or the caudal fin of a fish, in point of fact, it becomes V-shaped. This feature marks it out at once from all the other birds of the colony and indeed from all other birds I know.

The Rudder-tail (as I proceed to call it) is very common along the Corentyne Coast and may be seen in pairs. A great number have established themselves about the grounds of the Berbice Asylum where they stalk about with all the self-assurance of legal proprietors. There they build their nests (huge affairs of sticks and straw) in orange trees, and low bushes well within the reach of most persons. The eggs, four in number, are whitish with purple patches, streaks, and blotches.

When I essayed to take a nest of youngsters, the whole tribe assembled and by loud cries and gestures showed the strongest disapproval of the procedure. The boldest of them flapped their wings almost in my face. I succeeded in rearing one of the young ones but it did not come up to my expectations in point of intelligence. Before it was fully mature it contrived to slip through the door of the cage, and, contrary to its starling nature, never returned.

The *Quiscalus lugubris* derives its names from its voice: the former from a fancied resemblance of its note to that of a quail (*quisquila*, a quail, Lat.), and *lugubris*, mournful. Its note, however, is not more mournful than many other birds of its class. It has a way, something like the yellow-backs, of lowering its head, dropping its wings and tail, and fluttering its feathers when it wishes to be admired, uttering at the same time several bell-like notes: *te-wit, te-wit, te-wit, yessir, yessir, what, sir!*"

A few years ago quite a number inhabited the trees along the Vlissingen Road; but since the construction of the new Race Course only a few remain.

THE REED BIRD.

Of much the same size and build as the Rudder-tail is the Reed-bird or Yellow-head, as it is popularly called; but its habits are more retiring. He is clothed in a suit of velvet black with the exception of the head and neck which are yellow. He holds himself erect and has the appearance of a dandy in evening dress with a yellow face and wig instead of a white shirt-front. I am always expecting to see him drop a monocle and carefully adjust it again. There are black feathers around the eye and on the lore, which, together with the shape of the head and sharp beak, give him a foxy look. The scientific name, *Agelaius icterocephalus*, "the gregarious icterus-head," suits him very

well. The Icterus, after which the whole order of mocking-birds is named (*Icteridae*) was a mythical yellow bird among the Greeks and Romans, the sight of which would cure a person of yellow-fever!

The yellow-heads may sometimes be seen in large flocks among the rank reeds and rushes that grow along the rivers and in the marshy places. Hence its name. It feeds on seeds and at times does damage to the rice crops; but like most birds, it well repays the toll it takes by its usefulness in other respects. In a cage the bird wears the air of a dignified protest and the only note it utters is *dip-dip-dip*. I have never had an opportunity of rearing it from the nest and so I cannot say whether its demeanour would alter under these circumstances. Many birds can only be domesticated in this way. The sexes are alike except that the hen is smaller.

DOVES.

There are twelve or more species of doves indigenous to the colony. I may say in passing that the terms *dove* and *pigeon* are interchangeable. As a general rule the smaller and gentler species are called doves, the larger and bolder, pigeons. The word pigeon is derived from the French, (O. F. Pijon) and means (Lat., pipio), a young piping bird. The word dove is from the old English *dujan*, to dive: a word which may have reference to its undulating flight, for, needless to say, neither pigeons or doves dive into water. All observers of Nature must have seen a flock of pigeons, disturbed from their feeding ground, rise in a body and diving, as it were, into the bush, disappear.

Doves and pigeons are to be found all over world. They are homogeneous in form and feature and their habits are much the same. There are in all five hundred species.

SAVANNAH GROUND DOVE.

Of the ground doves (*Peristeridae*) seen in Georgetown, the Savannah ground-dove is the largest as it is the commonest. Its scientific name from the Greek, *Chamaepelia talpacoti*, means "the ground bird that scares the mole!" It is from six to seven inches in length, the bill being half an inch and the tail an inch and a half beyond the wings. The bird is a uniform pinkish red, fading into pink on the throat and cheeks; the crown of the head is cloud-grey. There are downward lines of black or blue-black upon the wings like the jottings of a pen; the under-wing coverts are black as also the under-feathers of the tail; the primaries are blackish-brown. The eye is red and the feet, of course, pink. The Indians call it *wiki* which means "shaven" and in truth the head has that appearance, being small, smooth, and light in colour. The hen is brown with corresponding markings.

The dove is gentle and timid, living amicably with smaller birds, though it defends itself with its wings should they shew themselves aggressive. Little finches if placed in the same cage will take advantage of its gentle disposition, and sidling up, will pluck a small feather and then, *mirabile dictu*, swallow it!

THE SPECKLED DOVE.

The speckled ground-dove (*Chamaepelia passerina*) is smaller, being barely six inches in length. It is brown-pink, fading into pink on breast, throat, and head; and into white on the vent. The feathers of the breast, head, and neck are centred with dull black giving the bird a speckled or scaly appearance. There are spots of purple-black upon the wings in irregular lines; the under-wings are red, the primaries also are red, edged and tipped with black; the under-feathers of the tail are also of this colour. There is a rim of minute feathers around the eye in lieu of eye-lashes. The hen is duller and smaller but is otherwise marked the same.

The bird is common in country districts and may be seen in open places, bustling about in a business-like manner in search of small seeds, and holding its tail at an ascending angle to keep it out of the way. Besides cooing, as all doves do, it has a curious note when alarmed like a tiny bark of a dog, "whuh-whuh-whuh."

THE TINY GROUND-DOVE.

There is another dove a little smaller still, *Chamaepelia minuta* or *griseola*, that is bluish. It is much like the speckled dove but has no speckled breast. The breast is pinkish blue, fading into white on throat and vent. The cheeks also are whitish, the crown of the head, nape, and shoulders bluish; as also the upper tail coverts. The back and wings are pinkish brown, and on the wings are a few purple jottings. The tail is grey tipped with darker colour; the under-wings are red; the primaries are red, but light brown on the outer edges and ends of the feathers. The hen is light brown generally with lighter breast and vent; the feathers of the back are edged with lighter colour; the bastard wing is red and there are a few black jottings on the wings. These three species live together peaceably in a cage, feeding and roosting together as if they recognized their near affinity. Their nests may often be found in low trees near human habitations, or even upon the creeper that grows on the wall. They will nest in captivity under favourable conditions.

THE COMMON THRUSH.

One may wake up in Demerara and fancy oneself back in England aroused by the familiar notes of a thrush. A few minutes of drowsy attention, however, will be sufficient to dispel the illusion. The song is not so well sustained as that of the home bird; there are lazy intervals between every few notes, and there is not the same vigour and variety. We have been listening to the song of the common colony thrush (*Merula albiventer*), a welcome though poor substitute for our own king of song.

After the kiskadee, no bird is so much in evidence as the thrush. He may be seen on our lawn pulling worms, or flying low from tree to tree uttering a low-toned note of alarm, something like our English black-bird: "What's this? What, what, what, what's that? Cher, cher, cher, cher."

In many respects, indeed, it is nearer the black-bird than the English thrush despite its colour. It is slightly larger, being seven or eight inches in length and is a little fuller in body. It is the plainest of plain birds, the prevailing colour being earthy brown, inclined to red on back and wings, greyish on the breast, and fading into white on the vent; hence its ungainly scientific name "White-vented-thrush." The throat is white with downward streaks of brown; the under-wing coverts are light russet-red; the iris of the large, prominent eye, is reddish brown. The sexes are alike. Young thrushes have spots of darker colour upon their breast, which fade away when they approach maturity. Hence perhaps has arisen the deeply-rooted conviction that the colony thrush is descended from English parents imported into the colony some fifty years ago. This, perhaps, and the fact that there is nothing peculiarly tropical about *albiventer*. Like our English kingfisher, it seems to have strayed out of its proper latitude.

This colony thrush is semi-domesticated, frequenting our gardens and building its conspicuous nest in accessible places, such for instance as the top of the pillars that support our dwellings in this mosquito zone. The nest is like that of our blackbird, though not so neatly made, and the eggs, two in number, are hardly distinguishable from that same black relative. No one seems to keep the thrush in a cage. I have a pair which I reared from the nest; but they are not tame now, dashing about the cage like mad-caps when I approach; and, screaming at the top of their voices, they peck, fight and struggle when I take them in my hand. But they feed well and are healthy. I had hoped better things and more intelligence from them, for when they were barely reared themselves, one of them would feed some rudder-tails, a little younger, which for convenience I had put into their cage. But Dame Nature has given all young birds an irresistibly appealing cry when they are hungry; and when are they not? These thrushes are very pugnacious among themselves, and no bird of equal or smaller size can be kept in the same cage. The pair I have, reared together, although not from the same nest, have occasionally terrific encounters, first one and then the other gaining the ascendancy.*

There is another thrush very like this, called the grey-breasted thrush; but I hope to write about that in a subsequent article. It may be distinguished from this by its under-wings which are grey, and not russet-red.

THE GOD-BIRD.

Even more familiar in its semi-domesticated habits than the thrush, is the charming little colony wren yecept the God-bird (*Troglodytes musculus*). It receives its generic name (Greek, one who creeps into holes) from its habit of making its nest in holes and crevices; and its

* NOTE.—Since writing the above one of these thrushes has come to a tragic end. As they were always fighting I separated them. Accidentally I left open the door of the cage of the hen. A wild thrush got in, the door slipped down, the birds fought. I returned to find my poor hen literally scalped and the intruder with its beak broken.

specific name, "the little mouse," from its mouse-like way of running about trunks of trees, under the eaves of houses and other such places in search of spiders of which it is very fond.

It is first cousin to our English wren which it greatly resembles in colour and form. But it is more engaging in its habits, being in this respect our robin out here. He will come into our houses in a confidential way, chuckling greetings as he goes. Sometimes he brings his wife and then the pair of them will go running along the pictures and shelves on a tour of inspection, making comments to each other; and now and then the little lord will break out into a song just to relieve his merry little soul. The song is a catch of twelve or more notes with a preliminary strophe on a lower key. I have noticed that he repeats the same arrangement of notes many times; but he changes it at intervals. Perhaps he tunes up each morning for the day.

He is called the God-bird on account of his predilection for churches when choosing a site for his nest. I took a nest from a country church that was simply built upon a beam in a corner. The young ones were too shy to take food from my hand, being past the age when birds open their mouths to everything. I carried them to the gallery of the house some twenty yards distant and the parents did the work of feeding, making much noise and revealing much of their interesting and lovable character in the process. In the end I gave them their liberty for they would not take the various kinds of food I offered and I could not subject them to sufragegetic treatment with their delicate mouths.

As I said in a former article, it is chiefly the god-bird that is seized upon by the lazy-bird to be wet-nurse to its babes; and it is no uncommon sight to see a pair feeding their great foster-child which with pitiful cries follows them about, long after it should have relieved them of the burthen of its support. Yet, after all, it is only carrying out the traditions of its family. Heredity is strong in the animal world. The god-bird is slightly larger than our Jenny Wren. Its beak also is longer in proportion and the bird is not so deeply-red. The throat and breast, indeed, are almost white; light reddish brown at the sides. The feathers on tail and wings are transversely barred with darker colour; a feature common among wrens; and the feet are large. It has an alternate specific name of *furvus*, that is, dark or gloomy: a libel on the character of this singularly bright and sprightly creature.

THE COTTON BIRD.

Flying along the trenches on the outskirts of the city, the Cotton-bird is a conspicuous object. I presume that it derives its name from its appearance, for seated on some bush beside its favourite trench, it might be mistaken for some fully-blown cotton pod. It is a small bird hardly five inches in extreme length, and being of an unobtrusive and prosaic nature might easily be unobserved but for its colour. For the body of the bird is pure white, and the tail, wings, back of the head and upper part of the back, black. The lower wing coverts as also the rectrices are tipped

with white. It has the appearance of wearing a cap pushed back from the forehead, and a black cloak slipped over the shoulders. It is known scientifically as the Black-and-White Tyrant Bird (*Fluvicola pica*); but there is nothing tyrannical about its nature. It is one of those birds which from its habits and environment has acquired the peculiarities of a bird of another order. It has, in fact, the habits of our Water Wag-tail, and even goes so far as to jerk its caudal appendage; but as this is short its efforts to imitate its prototype are more ridiculous than graceful. It is truly *fluvicola*, a river-dweller, but it is not *pica*, that is, "a bird that pecks its food from the bark of a tree." It is never found far away from water, feeding as it does upon the flies and other insects that gather about that element. It builds its nest upon some low bush or stunted tree, if it should find one fairly inaccessible to its enemies; failing that, it will not hesitate to build its homestead high.

I once had a nest of young ones; little animated balls of cotton. They were coming on nicely until one night (I was in the North West District) they succumbed to the cold.

The Cotton-bird has neither high bird-intelligence, nor tuneful voice, nor yet splendid plumage to recommend it as a cage-bird. The only note I have heard it utter is a modest *tweet-tweet*; and this not very often.

THE RUSTIC TYRANT-BIRD.

Another bird that is no tyrant though it bears the name is *Eleinea pagana*, vulgarly called the Muff Bird, which in creole language means "a bird with a crest." How the word *muff* in this colony has come to mean a crest passes my comprehension.

The name *Eleinea*, that is (Greek) "belonging to the olive tree," is given to the bird, I suppose, on account of its sober colour of drab. If by some magic art an olive-tree could be changed into a bird, this might well be that dénouement. Its tail would represent the trunk of that tree; the olive-grey feathers, the leaves; the yellow markings the young shoots, and so on. But I must describe the bird itself.

Six inches in extreme length, of which the tail is nearly two, the bird is a dull, homely, olive-grey above and light olive, fading into yellowish grey, below. There are two bars of yellow-olive upon the wings, the two lines of upper wing coverts being tipped with this colour; the outer edges of the primaries are also of the same colour; the vent feathers are yellowish-green; the under-wing coverts are also light yellow. The bird has a conical crest which is generally kept erect. Its note is like a low-toned policeman's whistle, *wre—wre—ah*. The mated pairs have a habit, common to kiskadees and some other tyrant birds, of taking a short flight together and then alighting, of saluting each other with shaking wings; and whereas the kiskadee utters his own name several times, little *pagana* seems to say, "*Wre—wre—wre, look at me, look at me, look at me!*"

Its name *pagana* must refer to its rustic appearance for the bird is common in towns and in Georgetown its little pea-whistle, as I may call it, is heard at intervals throughout the day. True to its name, however, it remains unsophisticated.

It has the habits of a fly-catcher, though one I once possessed subsisted on a diet of bread and milk, fruit, etc. But this was due I think to the excessive friendliness of a black-faced tanager which, as soon as I put the stranger into the cage, flew to it and showed it signs of undisguised affection, caressing it and twittering to it. And thus it seemed to speak: "Friend, take it not too much to heart that you are captive. Captivity is not so base a thing as it may seem. Here we have wholesome food in plenty, with neither hawks, nor cats, nor boys with stones our souls to vex. The cage is large and there's a dozen perches. And see this wheel! How nice it turns about! And in this mirror's smooth and glassy surface, we see reflected our most noble selves . . ." And so the rustic tyrant-bird took heart of grace and lived contented.

PARROTS.

But I must no longer delay writing about parrots, the most intelligent and in many respects, the most interesting of all the feathered tribes. Of the five hundred species of this great family found in tropical countries throughout the world twenty-five or more belong to this colony and include macaws, parrots (so-called), paroquets and love-birds. I may say in passing that it is a fault of our language that we have to call, not only parrots, parrots; but the whole tribe of *Psittacidae*: macaws, cockatoos, lorries, paroquets, love-birds and the rest. The same defect is found in other departments of Zoology; thus we call apes, baboons, gibbons, and the rest, monkeys, as well as monkeys proper.

The word "parrot" is derived from the French "pierrot": the French call the bird "Little Peter," just as we call it "Pretty Poll." Parrots have more brain, proportionately, than any other bird, and their upper beak or maxilla, unlike that of any other bird except the flamingo, is movable and not *anchylosed* to the skull. The tongue is thick and generally black, the eye intelligent and the pupil often highly dilatable. The feet, in common with cuckoos, toucan, woodpeckers and a few others, are *zygodactyl* (Greek "yoked fingers") having two claws before and two behind; the outer claw is forced back into what is evidently a primarily unnatural position. I might remark that the word *zygodactyl* would be more applicable to the chameleon, the claws of which are not only disposed in this way but those before and those behind are actually joined together. We have here an evident sign of evolution; it was necessary for climbing birds to have as firm a grip behind as before and so nature accommodated itself to their need.

Evolution as an active force in organic beings is too evident to every student of nature to be gainsaid; but that it has effected all that Darwinians would have us believe, is precisely what thinking men are

beginning more and more strongly to deny. Many facts that seem at the outset to lead to evolution are like blind alleys ; they go a certain way in the right direction and then suddenly terminate in a blank wall. Ruskin approaching the subject in a rhetorical rather than a scientific mood, writes : " Had Darwinism been true, we should long ago have split our heads in two with foolish thinking, or thrust out from above our covetous hearts, a hundred desirous arms and clutching hands and changed ourselves into Briarean cephalopods . . ." He is in a more scientific temper when, writing of the supposed evolution of the peacock's tail, he says, " I went to it myself, hoping to learn some of the existing laws of life which regulate the local disposition of colour. But none of these appear to be known ; and I am informed only that peacocks have grown out of brown pheasants because the young feminine brown pheasants like fine feathers. Whereupon I say to myself " then either there was a distinct species of brown pheasants originally born with a taste for fine feathers : and therefore with remarkable eyes in their heads, —which would be a much more wonderful distinction of species than being born with remarkable eyes in their tails,—or else all pheasants would have been peacocks by this time ! "

Much as scientists condemn the *à priori* reasoning of scholastic theologians, they instinctively fall into it themselves. For example, they would say that the parrot has obtained its movable maxilla by the continuous use of it as a climbing instrument, because, *à priori* this would be in accordance with their theory of evolution. But it is equally reasonable to argue, on the contrary, that the parrot having been endowed by nature with this most useful adjunct to its claws, immediately proceeded to give it its appropriate employment.

Parrots are the only birds that have conceived the bright idea of using their foot as a hand. Hawks, indeed, hold their victims with their feet while they tear them to pieces ; yellow-backs and birds of that class, will hold a morsel of food beneath a foot that they may eat it piecemeal ; and even grass birds will so hold an ear of grass while they peck out the seeds ; but only parrots use a foot to convey food to the mouth. When I was in India I had a paroquet that, planting itself firmly on its left foot, would, after the manner of an East Indian, gesticulate with its right, while it poured forth a torrent of imaginary eloquence !

But to return to our immediate subject.

As I am following no definitely scientific order in these papers, I may begin with the Love-bird.

THE LOVE BIRD.

Only one species of this charming family is to be found in the Colony ; but it is common in certain localities and has been seen about Georgetown. This, *Psittacula Guianensis*, is of a uniform pea-green colour, lighter below. It is hardly five inches in length, the tail extending but little beyond the wings. The under-wing coverts of the

male are of a beautiful ultramarine blue; the bastard wing, light blue. The ends of the primaries are brown and the tail feathers are pointed like the blade of a spear. The hen is paler, and yellow on the forehead. It well earns its name for it is disconsolate when alone, and when paired, neither seems content except when "sitting adjacent." And they are forever billing, warbling, and feeding each other. Like all true lovers they have their quarrels and reconciliations and it is interesting to watch them. Now, the little lord will bury his beak in the feathers of the neck of his spouse and whisper protestations of his love into her willing ear; then, something too trifling for human eye to note will happen and their delicate pink beaks are striking each other like castanets and their shrill voices raised. But it is soon over. The little lord gains the supremacy and they both go down to the seed-box to soothe their ruffled spirits.

I have three of these birds, the odd one being a hen and very *de trop*. The other two combine to drive her off as if she were a step-mother. Occasionally they relent a little and then the little lord has an affectionate mate on either side vying with each other in their fond caresses. He bears himself nobly.

Under favourable circumstances these charming birds will breed in captivity as freely as canaries.

THE WHITE-BREASTED PARROT.

Of all the feathered friends I have ever possessed in this country or any other, the seven-coloured-parrot, as this bird is generally called, is the most entertaining.

Pionites melanocephalus, its scientific name, may be translated: "the black-headed little fatty."

The one I once possessed was the first I had ever seen in the flesh. I had seen, of course, the Museum specimens; but a bird never interests me except as a link in Nature's long chain, until I have a living example and can hold it in my hand and study its ways. I was making a missionary journey on the Barama River in the North West District and slung my hammock for the night at the farm of a half-cast aboriginal Indian, of a type that is rare, for he was working his farm according to approved methods. The little parrot sat perched above the entrance of the loggia as I approached and I was at once struck by the bright green of the back; he seemed to have a satin coat on.

I found that he was treated like a member of the family, and was as playful as a kitten and as knowing and mischievous as a monkey. The children and he would run races or play hide and seek; and when it was his turn to hide and they couldn't find him, he would come slyly out of his hiding-place and nip the bare foot of the nearest child. Seeing that I had taken a fancy to him my host courteously said: "Father, if you like him, he is yours." It was of no use my protesting that I should be depriving his children of their pet. "Oh, there are plenty more: sometimes we get whole flocks of them."

Melanocephalus is seven inches in length, the tail, as is the case of all parrots (using the word now in its limited signification) being short. The head is large and the body sturdy. The back, wings, and tail are a vivid grass green; the breast is snowy white; the sides, thighs and vent, as well as the neck, a beautiful orange; the cheeks, yellow ticked with white; the crown of the head, and the beak are black; the bare skin around the eyes is also black, so that the bird seems to be wearing a cap slouched over the eyes; but the eyes are prominent being red. The cere is indigo, and there is a patch of dark green at the corners of the mouth. The bastard wing is blue; the green of the back, at the nape of the neck, is also blue; and the black cap is edged with the same colour. The under-wing coverts are brick-red and the primaries are tipped with black; the feet are black also. I may remark that those in captivity, are seldom clean-looking, for the bird is always getting into mischief and requires frequent bathing; but he repays all the trouble, for then he is in truth an object of beauty: the feathers having the appearance of clean wool, as the back and the wings of satin.

My bird was a great source of amusement. He would run races with me along the gallery and when I overtook him and essayed to pick him up, would lie on his back and playfully fight with beak and claw. When I caught him up and flung him away, he would come running back for the sheer fun of being flung away again. But when I put other birds into the gallery, his jealousy knew no bounds. He would rush at their cages when set at liberty and savagely attempt to attack them through the bars; and then I am sorry to say would as savagely attack me till I defended myself with a paper knife and so, in part, subdued his envious spirit.

A friend of mine had a pair of these beautiful birds; but they had to be kept in a cage for, content with their own company, they would, through mutual jealousy, allow no interference, biting savagely if approached, and laughing all the time. I dubbed them at once "the heavenly twins," after the hero and heroine in Sarah Grand's famous novel, for they were up to all sorts of mischief, and were perfect acrobats, twisting around their perches, swinging and putting their heads between their legs, leaping up, dancing and whistling. If one of them came to the bars of the cage and was shewn any attention, the other would dash at it in jealous rage and squabbling would go on for some time before they were reconciled again.

I am ashamed to say that these beautiful birds are too fond of eating and may actually die of surfeit if their food is not properly regulated. They may be taught to say a few words but are not good talkers.

AMAZONS.

Most of the parrots kept as pets in the Colony belong to one of the several species of Amazons indigenous to the country. But it would be unfair to judge of the tribe from most of the specimens one sees;

ill-caged, wrongly-fed, ill-kept, teased and scolded, with feathers be-draggled and voices harsh, they are often neither beautiful, nor desirable as familiars.

As they are all green and all, more or less, the same size, they may easily be mistaken one for the other by those not skilled in bird-lore.

The commonest of all bears the unenviable local name of "Screecher," (*Amazona*, or *Chrysotis*, *Amazonica*). When properly cared for, the bird is not the objectionable party his name would suggest. All parrots screech to some extent as the name. *Psittici*, given to the whole order testifies. For the word is derived from a Greek verb which means, to call, or cry, and truly among the feathered multitudes, there is no tribe or family that can express its feelings and sentiments so eloquently as parrots, nor do they hesitate to do so.

In size the amazons vary in individuals but speaking generally they are more or less the size of the African grey, being from twelve to fifteen inches in length. The feathers of these birds, when they are in good condition are hard and each one distinct, so that we might imagine them as clad in scale armour. I suppose that a Darwinian would assure us that feathers are merely scales, as of reptiles, frayed out.

The Screecher then, if carefully brought up from youth, is a charming bird though no great talker. It is affectionate and lively in disposition and in consequence is a general favourite. The whole body of the bird is grass-green; it has a yellow forehead, dome-shaped, and yellow cheeks and throat; the naked orbit of the eye is indigo blue and the yellow of the forehead is also edged with the same colour. The iris is bright red and the beak horn-yellow merging into black at the edges and point. The wing when opened is a beautiful object for the primaries are black with purple-blue edges and tips, and the secondaries orange, tipped with purple-blue; the bastard wing is yellow. When the wing is closed, only the ends of the purple-blue feathers are visible and a bar of orange. The tail, with the exception of the two middle feathers which are green, is orange, tipped with greenish yellow. When the bird cries, it opens out its tail and raises the feathers of the head in a pleasing manner.

THE CULU-CULU.

The Culu-culu, *Amazona dufresniana*, differs from the Screecher in several important respects. When fully developed it is a larger bird and of a darker green. The cheeks are indigo-blue instead of yellow, and the crown of the head green, merging at the cere into dark yellow which broadens into a patch at the lore. The beak is red with dark edges; the iris, warm brow with an outer ring of red. The wings are marked much in the same way as the Screecher, but the middle, outer webs of the secondaries are orange-yellow, and the red of the tail scantier and hardly noticeable; the bastard wing is light green. It is a much rarer bird and is a better talker; for though the Screecher, if brought up from the nest, will learn a few words quicker, the Culu-culu will learn more. It is a

shy bird and generally speaking will only be friendly to a few persons. It is also more sober in disposition and has none of the pretty ways of the Screecher.

THE RED-BACK.

A rarer bird still is the Red-back, (*Amazona festiva*—the Amazon of festive attire). This bird is much smaller being only eleven inches in length. It is a sage green with a crimson rump like the Red-back Mocking bird; its forehead also is red. The primaries are purple and black but the secondaries are a uniform cobalt green. The cheeks and throat are marked with blue, the beak horn-yellow. I have not yet made its personal appearance. I am told that it speaks distinctly and in a loud voice.

THE SAURAMA.

The Saurama Parrot is the largest of the Amazons. It is a rather gaunt bird measuring from sixteen to seventeen inches in total length. It is not in such request as the Screecher being slow, not to say dull and uninteresting. It may be taught to speak a few words and this it does distinctly, but the process requires time and patience.

It may easily be distinguished from the rest of the group by the broad circle of bare, white, skin around the eye, which, however, is not so extensive as that of the African Grey. The uniform green of the body is relieved by the line of purple-and-crimson of the wings and a yellow patch of indefinite and variable shape on the crown of the head. The wing feathers are the same as the Screecher except that the middle, outer, webs of the secondaries are a beautiful crimson instead of orange. The tail feathers, which are somewhat longer in proportion than those of other Amazons are green, fading into a light colour, and the outer feathers have sometimes an edging of light blue. The beak is horn-yellow, dark on the margins; the outer rim of the iris is red. The feathers of the nape and upper back have often a bluish tinge. There are some light crimson feathers on the bastard wing. I do not know why this Amazon should be called *farinosa*, that is *mealy* except perhaps that it has, more than the others, a tendency to become spotted with yellow. The alternate generic name of *Chrysotis*, "golden," may reveal the same proclivity in the family generally. The species, *aestiva*, not found in this Colony, is sometimes seen in its wild state entirely yellow. Or it may be that in this species the powder-down patches are more in evidence.*

THE AMAZON OF AMAZONS.

The King of all the Amazons is undoubtedly that species (*Amazona ochrocephala*) which is the only one of the genus known in England by the name of Amazon outside scientific circles. It is the Amazon par excellence.

Hardly inferior in size to the Saurama, it is handsomer in form and feather and withal, very dignified in mien. He is no common dog that

* NOTE.—In several classes of birds, including parrots, are patches of down beneath the contour feathers which disintegrate into powder, forming, in some cases, a kind of bloom upon the outer feathers.

makes friends with everybody ; but to his master or mistress he reveals a very intelligent and affectionate disposition, and will go to the length, parrot-wise, of endeavouring to feed the one on whom he bestows his affections, with food brought up from his crop. While one may appreciate the sentiment, one can hardly be expected to accommodate oneself to the mode of its expression.

This bird would almost answer to the description of the Saurama ; but as I have already said, the feathers are trimmer and the shape of the bird more graceful. The following points must also be noted : the yellow of the forehead, of a definite, mitre shape, is a of richer hue, and extends to the cere ; the beak is red ; the purple blue of the wings is more prominent ; the rectrices or tail feathers have at their base an inner web of crimson ; and while the bastard wing is light green, there is on the shoulders of the wings a prominent patch of crimson ; the green of the body is lighter and brighter. There is only a narrow circle of bare white skin around the eye.

I do not know why this species should be called *ochrocephala*, (yellow-head) for there is less yellow on the head than on the head of the Screecher. It is one of those many anomalies in scientific nomenclature that shews these names are to be regarded, more or less, as mere labels.

All these parrots make their nests high in the holes of trees. Generally, a partly decayed tree is chosen and the hole whittled out by their powerful beaks. They pair for life ; and though they fly in flocks to the feeding grounds, always maintain their couples. At night or in the morning they may be seen and heard as they return to their roosting place or go forth to feed, flying high on laboured wing and screeching as they fly ; the couples keeping as close together as if linked like chain-shot. If required as pets they should be obtained young. The Indians catch great numbers of these birds by stupifying them with smoke as they roost at night. These never become tame. Again, the bird may be domesticated but may have incorrigibly bad habits, or he may have been underfed. A male bird should be chosen for not only is he a much finer bird, but has a more equable temperament. Females may be better talkers, but in these birds the dictum of Rudyard Kipling is exemplified.

“The female of the species is more dangerous than the male.”

THE WEST INDIES :

THEIR COMMON INTEREST AND IMPERIAL AIM.*

By E. R. DAVSON.

There are few subjects so interesting to meditate upon as those of political progress and Imperial development, and in this very fact there lies a danger. The dreamer of Locksley Hall speaks of the time when

“ The battle flag is furled

In the Parliament of man, the Federation of the world.”

And since then many speakers and writers, basing their views on the cord of sentiment alone, have conjured up federal visions and dreamed Imperial dreams, which melt before the cold light of practical analysis. An Empire bound by sentiment alone is bound by a very fragile cord. With it there must be the fellow-bond of material welfare, and therefore I make no excuse in asking you to-night to consider the various points which I shall put before you from the material and practical point of view rather than from that of sentiment.

HOPE FOR THE FUTURE.

I shall not touch on the West Indies of the past, on the times when they loomed large in the history of England, on the later times when they seemed to fade into a somewhat neglected obscurity ; on the times when fortunes were made with incredible facility or the later times when they were apparently lost with even greater ease. I would start with the West Indies of the present day, hardened by the adversity of the past and perhaps a little sour by disappointment but nevertheless still retaining hope for the future and a belief in their ultimate destiny. And this belief is founded on two reasons, firstly, because never in their history have they had a greater variety of products and a greater prospect of finding an outlet for them in the markets of the world, and secondly, because they look for much benefit from the opening of the Panama Canal.

Coincident with this feeling of hope as to the future, there is a gradually awakening consciousness in the West Indies that that union in certain respects is strength. I put the beginning of this down to the founding of the West Indian Imperial Department of Agriculture with its threads running through the islands and with its Triennial Conferences at which delegates have met from all the West Indies, and have discovered possibly to their surprise, that they have had interests and aims in common. Then one notes the growing feeling that, on specific

* Address by Mr. Davson at a General Meeting of the Royal Agricultural and Commercial Society of British Guiana on the 10th February, 1914, His Excellency the Governor, Sir Walter Egerton, K.C.M.G., presiding.

subjects of common interests, it is for the good of each unit to take counsel with the others, and we find the inception of conferences of experts on various subjects, with which you are doubtless familiar and which I need not now enumerate. And lastly we find that great step in the history of the West Indies, when delegates from the various colonies went forth together to Canada and there united in making the first trading agreement which the West Indies have ever made.

A WEST INDIAN CHAMBER OF COMMERCE.

So far so good. And now what is to be the next step? At the last Agricultural Conference, one could notice a desire to extend the scope of proceedings to commercial subjects. So the idea suggested itself—if Conferences on agricultural matters, why not Conferences on commercial matters; and if Commercial Conferences, who more fitted to take part in them than the different Chambers of Commerce? In other words, why not an Association of Chambers of Commerce of the British West Indies? When, later in the year, the Triennial Congress of Chambers of Commerce of the Empire met in London, the need of such an Association became more apparent. In matters of both Imperial and local importance the Associated Chambers of Great Britain, of South Africa and of Australia could give their views, but the voice of the united West Indies was not heard. So, with the Articles of these other Associations as a model, Articles for a West Indian Chamber have been drawn up, which have been approved by the Imperial Council of Commerce (which as you may know is composed of the leading business men of the Empire to promote the Triennial Congresses), by the West India Committee (which as you know represents West Indian interests in England) and by all the West Indian colonies except Jamaica, which for reasons which one can quite understand, prefers to stand outside. It is to be hoped that the details of our Chamber will be completed in time to allow it to hold its inaugural meeting in the early part of next year, so that delegates may be appointed to represent it at the Congress of Chambers of the Empire which is to assemble at Toronto in the following June.

SUPPORT IN ENGLAND.

As showing the interest taken in this movement at home, may I read you extracts from two letters, which I do not think have yet been published? The first is from Mr. Charleton, the Chairman of the Imperial Council of Commerce. He says:

“Knowing as I do the value of similar Associations for the United Kingdom, Australia and South Africa and that a similar body is in contemplation in Canada, I think that the scheme is well worthy of the consideration of our West Indian friends, inasmuch as, while it does not interfere with the independent action of individual Chambers in purely local matters, it will tend to promote effective co-operation in matters of common interest, and will enable the West Indies collectively to take that share in the proceedings of future Congresses of the Empire to which they are entitled by the important interests they represent.”

The other is from Sir Owen Philipps, Chairman of the Royal Mail, who is always one of the first to encourage anything that will promote the welfare of the West Indies. He says :

“I am very pleased to hear of the proposal for the formation of the Association and wish the scheme all success. I should be very pleased to grant free passages to three delegates representing different Chambers of the Association to future meetings of the Congress of Chambers of Commerce of the Empire and also to allow three representatives from each Chamber in the West Indies a reduction of 20 per cent. from the ordinary fare by any of the steamers under my control when travelling to meetings of the Association in the West Indies.”

DIRECT APPEAL TO IMPERIAL GOVERNMENT.

There is just one other point. The Imperial Council of Commerce takes powers in its articles that, in addition to promoting the Congresses, whenever the British, South African or Australian Chambers appeal to it direct on any special matter, it shall, if it so wishes, bring such matter directly before His Majesty's Government and it has expressed its willingness to consider adding to these the name of the West Indian Chamber. This, I think, a matter of great importance, It means that in the future, whenever an urgent commercial question arises, we should have the means of approaching the British Government through the Imperial Council, in addition to the present mode of approaching it through the respective Governors of the colonies concerned and the Colonial Office. And now let us turn to one of the chief subjects which the Association will have to deal with but which I would rather now consider by itself. I mean the question of Customs. Here we find the realisation already apparent that there is a benefit in uniformity. The idea was, I think, initiated by Mr. Cameron, the late Administrator of St. Lucia, in 1909, and in 1911 the British Board of Trade put forward a scheme for securing uniformity in trade statistics and in the classification of articles of import and export. At the Steamship Conference held in Trinidad in 1913 the subject was again brought up and resolutions were passed asking for the consideration of such important points as a model Customs Ordinance, a model Customs Duties Ordinance, a model set of regulations for the classification of imports and exports and the preparation of Customs statistics and various other matters. Following on this businesslike proceeding I think it possible that a conference of West Indian Customs Officers may be held this year, when the subject will be taken in hand and, I hope, brought a step towards actual accomplishment.

WEST INDIAN FREE TRADE.

There is however one other point which has been already suggested and to which I hope attention will be directed and that is the possibility of establishing a Customs Union and Free Trade between the West Indian colonies. This idea divides itself into two parts, firstly, the possibility of free trade in indigenous products, and secondly, the possibility of free trade in imports. As regards the first, we are at present in the anomalous position of giving a preference to British and Canadian products and of giving none to those of our sister colonies. But why not a step further

than a preference? Why put duties at all on each others' products? It is not such a large matter as to mean a great loss of revenue and the benefit to be obtained should surely more than compensate for this, while, in addition, such an act would go far towards drawing us together in a common interest. To give only two instances: Would not British Guiana benefit by having a free market throughout the West Indies for its rice? Would not Trinidad find the advantage of a free market for its oils? Would every colony not benefit by being able to draw on its sister colonies for their produce in time of failure of crops? I think that the subject is at least worthy of consideration. The second part of the matter is more complex. One would like to see a state of things whereby goods imported into and paying duty, for instance, in Trinidad, could be resold, say, to St. Lucia or St. Vincent without paying a further duty. Thus would each colony have the whole of the rest to draw on for its supplies instead of being debarred from doing so as at present, by the double duty. But this abolition of the double duty is at once the object and the difficulty of the proposal. It might be possible—I am not an expert and do not know—to arrange a system of refund between colony and colony of the revenues collected on imports; if not, it might become necessary to pool the whole of the Customs revenues and redivide them according to the volume of trade or the population of the respective colonies. If the latter, one must admit that the subject is one rather for the future than the present, as this would probably mean a West Indian Customs service with a central governing body. At the same time one can see much advantage in such a service whereby junior officials may be promoted from colony to colony and thus enlarge their experience much more than they can do in any one place, and already it has been said that even if the proposed Customs Conference accomplishes what it will set out to, a permanent West Indian visiting Customs Inspector would be a necessity, in order to see that each colony was really working in a uniform manner with the others, and to prevent each slipping away into a separate channel again, as, owing to varying local conditions, the tendency must inevitably be.

A WEST INDIAN APPEAL COURT.

Let us now pass from Customs to Laws. Let us consider the proposals that have already been made for the establishment of a West Indian Court of Appeal. I know that both our Chief Justice and Attorney General take a great interest in the question. Before such authorities the layman naturally lies low and therefore I shall only touch shortly on the subject. The common interest here would be shown in the undoubted saving in judges' salaries in most if not all of the colonies, and in the fact that there would always be a certainty of Appeal cases being heard by those who till then had had no interest in them. A beginning should be made, in my humble opinion, by the establishment of a Court consisting of the Chief Justices of the larger colonies who would visit each colony including the Windward and Leeward Islands, periodically. The cost of this would be small and more than compensated by the saving

I have indicated. Later on, a permanent and independent President might be appointed whose salary would be contributed to by the various colonies and, following out the logical idea of development, as the trade and wealth of the West Indies grew, we might eventually see a permanent West Indian Court established with judges appointed for this work alone.

I see that Barbados has petitioned the Home Government on this matter, but from the petition I infer that it is considering the strengthening of its own Court of Appeal rather than taking the wider view of the subject which would appear to be necessary for the common interest of the West Indies. It might have been better to consult the other colonies interested first and to have arranged a definite scheme; but one must not criticise any colony in taking a definite step forward and I can only hope that one of the next conferences will be a legal one which may be able to bring this matter to a satisfactory consummation. I have touched on these subjects wherein the West Indies may find a common interest and there are various other ones which have been suggested in one form or other but which I shall not allude to because time does not permit and also because, while admitting their sentimental value, I cannot for the present at any rate see their material advantage. But there is a greater matter behind all these—what is the logical development of all these ideas of unity and uniformity? If communities draw continually nearer to each other in a common commercial interest must they not eventually find a common political interest? I may remind you how Aristotle opens his first book on "Politics." "All communities aim at some good, but the political community, which is the highest of all and which embraces all the rest, aims, and in a greater degree than any other, at the highest good."

PRECURSOR OF A LARGER SCHEME.

I must admit that my own views are changing. I have held, and I do so still, that the West Indian community of interest is essentially commercial, but when one studies such questions as the West Indian Court of Appeal, to which I have referred, and sees its logical development until a distinct and separate Court is created and perhaps the need of codified West Indian law arises: when one looks at the development of Customs until we see before us a Customs Union and perhaps a West Indian Customs service with its own officials and a common revenue, one begins to feel that we are creating a body with suitable and useful limbs but with no head. Who is to give effect to, to supervise, all these schemes? An increasing round of *ad hoc* conferences is obviously no solution. Therefore I believe that if progress is made on the lines indicated, we must eventually be faced with the desire of some kind of political union. Now, the first question which will suggest itself to this colony will be, "Granted that the islands will benefit by political union, why should we, a continental colony, with continental interests and aims, ally ourselves with islands whose development may be on different lines?" After reading our morning papers, some of us have to-day "Dip't into the future far as human eye could see," and picture this colony as one with a teeming

population, with ocean steamers crowding its waterways, and with a trunk railway line carrying down both the wealth of the interior to the coast and also a large part of the international trade of Northern South America. Should we not then work out our own destiny like other continental countries? It is outside my scope to touch upon this colony's development, but let us look at actual facts. Supposing that the West Indies, even excluding Jamaica, with their total revenue (I quote 1910-11 figures) of £1,490,000 against ours of £563,000 and their total trade of £11,300,000 against ours of £3,570,000, say, "Well, we shall form a political union without you," would not we find it very difficult to make our bargains with the outside world possibly against their united strength? Would it not be better to join with them at least until we are big enough to stand alone, and have an influential voice in making a collective bargain? We now find it beneficial to ourselves to join with them in holding these various conferences, in making Reciprocity agreements and, as I hope, in joining in a common Chamber of Commerce. We may find it expedient to join in a Customs Union, in a common Court of Appeal, and in various other possible ways.

IMPERIAL CONSOLIDATION.

Surely, then, the sequence of commercial and political development applies to us as much as to others. But in order adequately to consider the subject to get the right perspective, we must glance for a moment at Imperial politics. The British Empire differs from all the great Empires of the past in its recognition that its colonies are not tributary subjects but are free people entitled to their own rights and liberties. This recognition was first brought home to England by the loss of what are now the United States in 1775, but the full acceptance of it may be said to date from the great report of Lord Durham on Canada in 1837, which has been aptly described as the Magna Charta of the British colonies. From that time England has nursed its colonies through childhood's years, and as they have reached adolescence she has sent them forth as nations into the world, so that each can say, as Kipling has it, "Daughter am I in my mother's house, but mistress in my own." Or to take another simile, we may liken the present position to that of a solar system with each planet or dominion revolving on its own axis, projected by the centrifugal force of the Mother Country on the one hand and drawn by the attraction of body to body, of kin to kin, on the other, and thus by the counteraction of these contending forces held in a state of unstable equilibrium.

UNSTABLE EQUILIBRIUM.

How long is this equilibrium going to last? Can we remain in this position for ever? Lord Rosebery has put the matter very definitely: "It is absolutely impossible for you to maintain in the long run your present loose and indefinable relations to your colonies and preserve these colonies as part of the Empire."

This view, I think, is generally accepted, and so we have two schools of thinkers, firstly, "centrifugal" or nationalist ones who see each

Dominion becoming an independent nation, attached only by the slender cord of sentiment, or, as one writer has put it, "A Federation providing for the natural growth of colonies into nations possessing in matters military, commercial and relating to treaties the fullest and most complete autonomy." Secondly, the "attraction" or Federation thinkers, who would see the component parts drawn closer together until we reach a Federal Parliament ruling over the whole of the Empire as one United Realm. Of this school I would quote a writer as saying: "The true idea of Federation as applied to this Empire is embraced in a Federal Parliament, with its Federal executives having jurisdiction over all matters that are Imperial. Nothing short of this would meet the political genius of our people and if such a policy be impracticable, then permanent Imperial Unity can never be, and this stately structure, the British Empire, must fall, even as it has risen."

THE VIA MEDIA.

That is the present extremely interesting position, and even if one rejects the first alternative as being anti-imperial, one finds that some of the leading publicists of the Dominions hesitate to accept the second as implying a certain abrogation of rights on the part of the Dominions and as bringing them into subjection, in a measure at least, to the dictates of a Parliament in London. I cannot help feeling that those are right who think that a solution will be found, as oft-times before, in a *via media*. This may be through what was once the Colonial Conference, assembling once every four years, and which has now developed into the Imperial Conference, with an established Secretariat.

If this were to become an annual or a permanent Conference, if the experiment of giving it representation on the Council of Imperial Defence were developed, if it were consulted in matters of foreign policy—and of this we have already seen the beginning in the Foreign Office taking Mr. Borden into its council last summer—some think that we should find the nucleus of an Imperial Council which would go far to satisfy the colonies in their cry for a voice in foreign affairs and prevent their being plunged into international conflicts against their will—in fact to solve the problem of Imperial Federation.

DIFFICULTIES OF POLITICAL UNION.

Now, let us hark back to the West Indies. Supposing, as is most likely, that one of the two latter alternatives occur, supposing that some form of Federal or Imperial Council is eventually created, the Dominions would be represented, and surely a United West Indies would also claim a place. This then must be considered, would British Guiana and the West Indies be the better to fight out their own destiny, unrepresented as now at the Imperial Conference, unrepresented as they are now even on the Dominion Trade Commission, or would they be wiser so to shape their steps that their representatives may eventually be able to take their set seats at whatever Council may be called into being and take their share in the business of the Empire? That is a problem the solution of

which I must leave to you, but let us, for the sake of argument, assume that we are ready to consider this matter of political union in any scheme of Federation.

We are first of all faced with the difficulty that the different colonies have different constitutions; even if we surmount that trouble we are faced with the difficulty that Federation, in its true sense, means a central Parliament controlling all the States of the Union except where powers are delegated to local parliaments for the administration of local affairs. This may be suitable for Continental Unions, but in the West Indian islands, with their different traditions and their strong local feelings, such governance, across miles of sea and by those possibly only partially informed of the problems involved, would, in my opinion and I think in the opinion of most, make not so much for union as for disunion. Indeed, I think the conclusion is justifiable that Federation, as carried out in Canada, in Australia, in South Africa, is for many years to come impracticable for the West Indies.

A FEDERAL COUNCIL.

So we find that the various schemes for Federation which have been suggested and attempted in the past, and with the history of which I shall not weary you to-night, have all been wrecked upon this rock of Central Government. To my mind, the only practical scheme so far put forward is that of the Hon. C. Gideon Murray, Administrator of St. Vincent, for a partial form of Federation. He avoids the constitutional question, the interfering with local Governments, by proposing a Federal Council under a High Commissioner with representatives appointed by the different colonies in such numbers as to give them their proper proportion of voice in the Government. This Council would not concern itself with local Government, which would be carried on as now, but would deal only with certain definitely specified subjects of common interest, such as those to which I have already referred and as agreed upon by the various Governments concerned. A political union of this sort is as simple, as rational and as feasible as any commercial union. But a Council which only discusses matters without any executive powers is apt to descend to the same plane as that of a debating society. Therefore it must have executive powers on these specified matters, and to have executive powers it must have spending powers. This means a common fund and Mr. Murray suggests the allocation of a certain proportion—from 3 to 5 per cent.—of the revenues of each of the colonies. With this the Council could meet its expenses and pay the various subsidies which it, as representing the whole of the West Indies, would have to arrange. I know that criticism is easy—it always is—but one cannot help thinking that in such matters as the existing shipping combines, as the Canadian pilgrimage, when we certainly went forth collectively but each to make an individual and not a collective bargain, as the recent Mail contracts, where each colony had to play with its cards on the table while the other side held its hand up, as the cable question with its only partially satisfactory solution, a United West Indies would have done more than the present scattered units have accomplished.

CENTRAL COUNCIL NEEDED.

In fact, when we look forward a stage, and see the logical outcome of West Indian development, we must realise that we shall sooner or later need a head, as I have said, for the body for which we are creating limbs, and that such a Council will be necessary for us both in local West Indian affairs and in enabling us to take our proper place in the Councils of the Empire. The attitude of the British Government on this point has never wavered from 1876, when Lord Carnarvon in speaking of the West Indies stated that "Her Majesty's Government could not proceed with any measure of Federation except on the spontaneous request of each Legislature concerned," to 1912, when Mr. Harcourt stated in the House of Commons that "Any scheme which meets with the general approval of the communities concerned will command my most attentive consideration." Therefore the matter is entirely in our hands.

And now I have finished. I have endeavoured not to dogmatise, but rather to suggest matter for your thought. For it is only by the consideration of these subjects, by the thinking men of the colonies and by their ventilation in the press—and we have a press here which has already given proof of its desire to investigate them—that public opinion can be formed. Let us consider all these matters, firstly, from the point of view of our own material welfare—how far we may benefit by independence, by isolation, how far by working with our neighbours in the Common Interest, to the Common Good. But also let us remember, although I have purposely avoided touching on it, that the cord of sentiment is at least co-equal with that of material welfare. For we are all of us citizens of Empire, whether we reside here or have interests here or are here only until we are translated to higher spheres of duty elsewhere, and in working for the colony's good we should strive to do so not only for its immediate and local benefit but also that it may develop step by step, in conjunction with its sister colonies of the West Indies until it eventually takes its rightful place in the wider Imperial scheme—a place not as great as that of the self-governing Dominions, but one nevertheless of which we need not be ashamed.

If then the stone that we can build into the edifice of Empire be only a small one, yet let us see that it be well and truly laid, and so may we the more worthily echo the prayer which becomes increasingly justified as the years roll on :

"May He who hath built up this Britannic Empire to a glorious and enviable height, with all her daughter lands about her, stay us in this felicity."

SIR WALTER EGERTON ON WEST INDIAN UNIFICATION.

In the course of the discussion which followed Mr. Davson's address His Excellency Sir Walter Egerton said he was much relieved, in listening to Mr. Davson's lecture, to find that he fully realised the very great difficulties that attended Federation of the West Indies. He did not think

those difficulties were properly realised by the people at home and not even by members of the West India Committee who had been for a long time away from the West Indies. They, of course, knew that Jamaica was as far away from British Guiana as Gibraltar was from England. The chief objection that he saw to Federation was that it meant the weakening of local Government. It meant the determination of important matters by an Executive or Legislature not fully in touch with local conditions and requirements. (Hear, hear.) Therefore he would rather strive, at present at least, for uniformity and combination without a definite Federation of widely-scattered and isolated units. He was therefore relieved to find that Mr. Davson was very nearly in agreement with him on that point, if not quite. With the exception of British Guiana they were speaking entirely of islands, and could they call to mind a successful Federation of a number of islands or countries separated by water? The successful Federations that they had before them to-day were Austria-Hungary—it did not hold very tightly together he admitted—they had the German Empire, and that was a wonderfully successful Federation, the reason, he believed, being that it was a thorough commercial Union, for it was the great Customs Union of the German Empire that gave its people a common interest. Then they had Australia, a Continent and a successful Confederation, but the efforts to join New Zealand to it were unsuccessful; and even Tasmania could not be brought in. Then they had South Africa, a purely continental Confederation of a compact block of land, and that he thought also would be successful. Then they had also the Confederation of Canada, the one they as Britishers were all so proud of; but even Canada had so far failed to attract Newfoundland, the island lying very near her coast. The West Indian islands were very widely separated by the length of time it took to travel from one to another and they were further separated by the fact that there was no West Indian community of sentiment and ideas. (Hear, hear.)

FEDERATION SEVERED BY WATER.

Therefore he was very much afraid that real Federation was a thing not to be realised in their time at any rate. He would give them one other instance of how water seemed to sever Federation in our own country between Great Britain and Ireland. There they had a thorough Federation between England, Scotland and Wales, but Ireland would always be separated and the splitting of it from the other three communities was, as they probably knew, now giving rise to such terrible and serious commotion and discussion at home. (Hear, hear.) He hoped they did not think he desired to throw cold water on Mr. Davson's proposals. He thought them excellent, but he thought the best way of knitting together the different Governments more closely was gradually to do so by those conferences that they had begun with the Quarantine Conference. (Hear, hear.) The latter Conference had been one of the most successful that had been ever held, for although he was living right on the other side of the world still he saw from the papers he read what a terrible thing

West Indian quarantine used to be, and he quite realised the difficulties that were experienced when they went along a string of islands and found different quarantine regulations at each one. (Hear, hear.) Well, they had now a common quarantine law and they now hoped very soon to have the West Indian Court of Appeal, and here he desired to interpolate the statement that he did not think they would be able to do much with Jamaica or Bahamas until they had done something to unify in other directions. The institution of a Court of Appeal for the eastern islands and British Guiana seemed to him to be a very easy matter and they had hopes for the Conference to meet this year. They knew that Barbados and British Guiana were agreed on the point and they hoped to convert Trinidad. They could let the Trinidad Judges be ex-officio Judges in British Guiana and the Judges in British Guiana be ex-officio Judges in Trinidad, so that when there was a Court of Appeal formed both could take part. (Hear, hear.) He was sure it must be a most unpleasant thing for a Judge to sit as one of the Judges of appeal upon his own judgment, and he could not think anyone could be surprised if a Court of Appeal stuck to that judgment. Even if only British Guiana and Trinidad joined together they would always be able to have enough Judges to form a strong Court of Appeal in each colony, and every additional colony that joined would strengthen that Court. (Hear, hear.)

MUTUAL COMMERCIAL UNDERSTANDING.

He also thought it would be quite easy to come to an understanding in regard to the laws regulating Customs matters. On that subject, he also hoped, and it had been proposed by Trinidad, that a common Ordinance for the various colonies might be agreed upon so that the people living in one colony would know exactly what the Customs law was in another colony. (Hear, hear.) Mr. Davson had mentioned how it might be possible to have Free Trade in products in the West Indies and British Guiana. He thought that was a most sensible proposal and he could imagine nothing that would help on the other matters better than having a mutual commercial understanding and Free Trade between the islands. He thought Free Trade in imported goods might be managed. He was sure that the Comptroller of Customs, Mr. Reid, could draw up an Ordinance or Regulations under which goods imported, say, into Trinidad could be exported to British Guiana, the duty paid being refunded, and this would be a convenience to commercial gentlemen. (Hear, hear.) There was another point that had occurred to him. They had four race meetings here and he thought there were too many. But it would seem that they wanted a common racing law in view of a recent case which took up so much time in the Supreme Court; but that was going somewhat outside their business that evening. Then again they could have a common Penal Code for all the colonies, for there was no doubt that there should be the same criminal law throughout. (Hear, hear.) Here in British Guiana they had not got a Penal Code at all and the sooner they had one the better. (Hear, hear.) In agricultural legislation surely they wanted a common law for the West Indies and British Guiana

regarding the importation of plants from Europe and the United States. And similarly as they had a general quarantine law in regard to human beings why not extend it to animals? (Hear, hear.) They recently had had an outbreak of *Mal de cademas*, and how advantageous such a uniform law would be throughout the colonies? Other subjects were the laws regarding patents, trade marks, and copyright. In regard to the latter he thought they had a common law and were getting it at the instance of the Home Government, but as to trade marks he believed each colony had its own law.

TELEGRAPHIC AND STEAMER COMMUNICATION.

Certainly when the time came to enter into the new mail contracts or agreements in regard to telegraphic rates all could see in what a very much better position they would be if the West Indies had one person speaking for the whole of the eastern islands and British Guiana. (Hear, hear.) How very nice it would be too if they had a general Board to decide matters of Education; they would not then have had all the recent trouble, and it was not even now finished, regarding their Code of Education in British Guiana. (Hear, hear.) It would be a good thing if in that they were all brought in closer contact with things that were going on in other colonies. The one great thing when they came to have a general Council such as the Hon. Gideon Murray had proposed for the colonies was, he thought, the question of representation on the Council. How difficult it was they could see if they examined the scheme drawn up by Mr. Murray after much attention to the subject. Looking at Mr. Murray's proposals he found that British Guiana, Trinidad and Barbados would be absolutely controlled by the smaller islands, and no one could contend that those places should not have a prominent voice in those Councils. (Applause.) He thought they should take up each separate subject and get the experts in the different colonies to meet together and submit a scheme dealing with them specially. Each time that they succeeded in getting a general agreement on one particular question made further agreement on another subject more easy. (Applause.) Each Conference held resulted in the leading men in the different colonies becoming better acquainted with each other and with the conditions in other colonies. At present they were most terribly ignorant of the men who count in the different colonies and of the conditions of those colonies. Taking this colony there were very few people who had any knowledge of the conditions in Trinidad or Barbados, but the subject that Mr. Davson had brought before their notice could not but help to develop their thoughts and bring them to a better understanding. (Hear, hear.)

REMINISCENCES OF DEMERARY.

BY MEWBURN GARNETT.

At a general meeting of the Royal Agricultural and Commercial Society held on the 20th December, 1913, the Hon. J. B. Laing, President in the chair, Mr. Mewburn Garnett contributed a paper on "Reminiscences of Demerary."

Mr. Garnett stated that when he was first asked, as one of the oldest members of the Society and one who had always taken the deepest interest in its welfare, to say a few words on the Society of the past, he hesitated for fear that his remarks might not be interesting and also from the fact that since he last spoke in the hall of the Society a new generation had sprung up which might not be in sympathy with the dead long ago. The kind remarks of the president and the hearty welcome which had been accorded him gave him encouragement, and he thanked them all very heartily for their warm reception. "I can but hope, therefore, that in the hustle of a more restless age when the whole world, socially, politically, commercially and I might add religiously, would seem ready to break into discord on the slightest provocation, when in England the feeding or non-feeding of a Mrs. Pankhurst stirs Society and locally the beautifying or not of a Cathedral causes dissension, I say in the midst of all this I hope there might yet remain a few grains of interest in a Society of which we are all proud to be members."

To confine himself to his reminiscences he was afraid his remarks must naturally become very egotistical, and therefore he proposed to touch on the Society as it existed long before his time. First of all, he wished to pay tribute to the spot on which they were assembled that day—a spot which was of interest second to none in the colony. It was there, on the occasion of the original occupancy of the British in 1781, that the first fort was built in Demerary to protect our flag. It was a poor little mud structure but they were very proud of it. They strutted up and down its battlements, weather permitting, and they christened it Fort George after their King, for the Colonials of those days were as loyal to their Georges as those of the present day are to the gracious Sovereign of the same name who reigns over them. An inefficient structure that old fort, near it courida bushes and many mosquitoes, the penetrating power of whose descendants has by no means diminished. Can it have been the aggressive galinipper which caused the Government offices to be erected at Borselem? Oh the simplicity of Government officers on that happy island! A Customs without dues and only the receiving generally of *arrows* from the natives which hardly required an audit! But the historic fort was to suffer an indignity. The French, who were the allies of the Dutch of that time,

sent a fleet to the colony, and, alas, the little mud fortress suffered. It was pulverised and the British suffered a reverse, and for a while the dependency of Demerary knew them no more. The French founded the hamlet of Longchamps, and on their return the Dutch, finding the town already more or less established, determined to give up their old idea of building their city at Plu. Wales, where the Hoobaboo creek would always give them a very good supply of fresh water. They therefore settled down at Longchamps and rechristened the place Stabroek.

We next hear of our present meeting place about 1800, as occupied by a hospital—Demerary's first hospital—up to this time the sick were treated in a coffee logie in La Bourgade. The hospital here was called the Seamen's Hospital, but as a matter of fact it must have been more than a Seamen's Hospital, for many of us have doubtless studied with feelings of pity for its past inmates the remains of the old Mad House which are to be seen here at the east of the Museum. Its brick walls and iron doors are still in existence and they form part of the old building which I think is still used for Government purposes. The occupants of the hospital were later removed to a building on the present site of the Colonial Hospital to-day. At one time I had the honour of being a governor or director, or whatever the term was, but the office has long since been abolished. To-day our hospital is not only the largest and best equipped in the West Indies but for research is second to none in the tropical world. The old remains of Demerary's first hospital ultimately developed into the Royal Agricultural and Commercial Society. It is the fashion to disparage the present and its personalities in comparison with the past. To my mind unless this can be done so as to draw some object lesson which will improve and better the times we live in, then such a comparison is harmful. It can only cause dissatisfaction and unrest, but be this as it may, it in no way prevents our acknowledging the gigantic intellect and force of character of the young Scotsman who founded our Society and who started a concern which was to prove such a factor in the advancement of this colony. I can fancy I hear the bleat of the pessimist of those days as the matter was discussed in the Société Endract, the Union Coffee House. "My dear fellow, I never heard a more quixotic thing in all my life. Have nothing to do with it I tell you. It will never pay. Rather use your energies in criticising our new koker. It is a disgrace. The Colonial Architect's Department—which used to be the Public Works Department in those days—has completely gone to the dogs; there should be a commission. Come along and have a sangaree with me and we will talk it over." But our founder had no time for grumblers. His mind ever harked back to the old deserted hospital to be turned into an institution which was to appeal to every calling in this colony.

There was to be an Agricultural Society, the Commercial News Room, the Literary Society, and the Museum. Indeed his dreams went further, because in those days there were no thoroughly well-conducted clubs and he thought this Society might supply that much required want.

I might here mention that one by one the old Coffee Houses came to grief. Party politics, intrigues, and possibly broken heads, caused their downfall; and the Royal Agricultural and Commercial Society might have shared the same fate had it not prudently passed a stringent rule that nothing of a political nature might be discussed within its walls. It is hard to appreciate the difficulties which attended the undertaking, the success of which was very doubtful. The Press of those days gave a very faint encouragement, for referring to the proposed new Society the "Gazette" remarked that whilst the object of the Association was mainly to bring persons together to promote inquiry on matters connected with our minor industries it was proposed further that a library, a museum, an official and commercial room, and a gallery of models should be established—this gallery of models I take to be a jest on the part of the paper because it was not included in our founder's scheme. The "Gazette" goes on to say that many of the advantages of a private club should be obtainable here; but the paper becomes absolutely prophetic when it concludes by saying that the Society would no doubt flourish, "not so much for the sake of its main objects as the allurements of its subsidiary enjoyments." Of all the attractions offered the gallery of models was the only one not forthcoming, but we have a very excellent exemplification of the sculptor's art in memory of our founder, the late Mr. William Hunter Campbell, and next to him we have two interesting works of art, one a painting of the late Mr. John Croal and the other the bust of the late Dr. Blair. I have just been admiring them and it is hard to think when you see them looking so peacefully there, almost at one another, that at one time they were involved in a sanguinary encounter, or at least what ought to have been a sanguinary encounter, for they rushed off in hot haste to the D'Urban Race Course, each thirsting for the other's blood; but fortunately for the community they turned out to be better colonists than they were pistol shots and after firing for a considerable time and not being able to hit each other, they thought it best to shake hands and come back and have a sangaree.

Time did not permit him following the Society's early history, but those interested in the colony would derive much enjoyment if they read the very able article on "Clubs and Societies in Georgetown prior to 1844" by Mr. J. Rodway which appeared in "Timehri" of 1892. With their permission he proposed to skip forty-two years of the Society's history. In forty-two years the colony had changed and so had the Society. It had been burnt out and disintegrated, for societies dealing with matters hitherto essentially its own had been formed. Agriculture was now no longer occupied by this Society but was dealt with by the Planters' Association and at present by the Board of Agriculture.

Commerce found protection in a special Chamber, and in 1886 the Society centred itself upon the Assembly Rooms and the Georgetown Club, which was founded, they would remember, fourteen years later, and back from the shade of long ago comes the echo of the

“Gazette” of 1844: “We were to live, not for the sake of our main objects but through the allurements of our subsidiary enjoyments.” The Society in 1886 was slow in seeing how necessary it was to encourage any of these “subsidiary enjoyments.” “Here delicacy prompts me to say,” proceeded the speaker, “that I ought to stop and merely refer you to the papers of 15th October, 1886, for mine was the resolution which caused the biggest upheaval our Society has ever experienced. To pass it over would be to omit one of our stepping stones. My principle was the popularising of the Society by reducing its then heavy subscriptions so as to open its doors to poorer members of our community and by the extension of our library. We had meetings and there was much enthusiasm, for we were very much alive in those days and arguments waxed hot. I remember one in connection with another matter, which now, looking back, seems very small but which then was everything. A keen antagonist. I remember. wrote me on jet black paper with red ink—yes, we were very enthusiastic in those days. At the general meeting which caused the parting of the ways of our Society my resolution was carried by an overwhelming majority. What a comfortable thing it is to be on the popular side: how easy to create a following when the aim and object is the reduction of a subscription or the lessening of an monetary obligation! There was, however, some opposition—fortunately there always is opposition or things would be very flat—and I was told that I was interfering with the prerogative of the executive. The sequel of our victory was unlooked for. Not only did our much revered president, the late Mr. Wm. Russell, resign, but his example was followed by a great number of other members of the executive and also by Mr. Everard in Thurn, now Sir Everard in Thurn, the founder of ‘Timehri.’ The pessimists once more bleated. We were undone without our Sugar King; we were undone, and the days were not only numbered for the Society but for its mouthpiece ‘Timehri.’

“But little did they know the vitality and power with which without in any way deranging the Society we were able to form a new Cabinet. Mr. Henry Kirk was elected chairman, Mr. P. H. Nind vice-chairman, the managing directorate falling on Mr. D. C. Cameron, Mr. J. S. Hill and myself. My colleagues, Mr. Cameron and Mr. Hill, have passed on leaving with me but the happy memory of my association with them. They were good friends and true. Our work was strenuous and thanks to the admirable assistance given us by the late Mr. F. A. Conyers, the treasurer, we were very soon able to put our house in order. The lapse of time has been great and I don’t want to be hypercritical but it seems incredible that a latitude should have been given to the members in the payment of their subscriptions which showed arrears in \$5,163. The severance of Sir Everard in Thurn was a great loss to us, but Mr. Quelch, at that time curator of the Museum, and later Mr. Rodway, kept the journal going for us in these days. And, in conclusion, what of the Society to-day? If in sympathy with the general depression of the times we may have suffered we know that it is through no lack of enterprise on the part of our executive, whilst the Society’s mouthpiece

'Timehri' has never been more ably conducted than under the untiring guidance of our able vice-president, Mr. Numan. I hope Mr. Numan will excuse me for making a directly personal, however truthful, remark in his presence. As a community we have no longer to fight the uphill fight of our forbears. We live in enlightened times and in an enlightened city second to none for its population in the tropics. Let us not mark time but exercise our best endeavours to create thought for the future advancement not only of our Society but of the Magnificent Province in which it is our lot to work."

PROCEEDINGS OF THE SOCIETY.

THE PRESIDENT'S INAUGURAL ADDRESS.

At the general meeting of the Royal Agricultural and Commercial Society held on the 27th January, 1914, the late Sir T. Crossley Rayner, Chief Justice, delivered his address as President. He said he found there was in the public mind a good deal of misconception as to what the functions of the Society were. The name of the Society was perhaps in some way slightly a stumbling-block to its prosperity. People seemed to think that the object of the Society had ceased to exist now that they had the Chamber of Commerce and the Board of Agriculture, these two bodies being considered by them as better able to carry out the functions which the Society formerly exercised than was the case now. He ventured to think that that was an entirely wrong idea and quite a misconception of the functions of the Society and of the ideas of those who many years ago brought it into existence. Both the Chamber of Commerce and the Board of Agriculture were very necessary and very important bodies, but they were bodies constituted of experts. The Chamber of Commerce consisted of the leading merchants; the Board of Agriculture was a statutory body created under an Ordinance, and transferred to it were certain functions which used to be exercised by the Governor-in-Council. These two bodies were therefore bodies of experts dealing with the commerce of the colony on the one hand and agriculture on the other, and they were bodies to which the general public had no access. A great many persons interested in the commerce of the colony could not possibly be in the Chamber of Commerce, and in the same way it was quite impossible for them to be appointed members of the Board of Agriculture. But there were lots of people who were neither experts in agriculture nor commerce who nevertheless took a real interest in the welfare of the colony and would be very glad indeed to have some opportunity of showing that interest and doing what they could to develop the colony and to push forward its interests, and it appeared to him that this Society above all other organizations in the colony was the medium by which the general public who were not experts in any particular branch could do that. They could combine together and in various ways advance the interests of the colony. Their function really was to give information, to educate public opinion, and arouse interest in the various questions which from time to time came before them for the advancement and welfare of the colony. For a body like the Chamber of Commerce or the Board of Agriculture it would be impossible to organise meetings, give information and arouse enthusiasm, but these and the creation of a sound public opinion on the various questions were essentially functions of the Society.

LARGE SPHERE OF OPERATIONS.

Now although the name of the Society was Agricultural and Commercial, yet he took it that they were not limited to those two subjects. They were not to consider their functions in any narrow spirit and say everything but agriculture and commerce were outside the sphere of their operations. His view was that the Society should take within its purview anything which would benefit the colony and promote its welfare. All wealth came from the soil and commerce was the means of dealing with and diffusing the products from the soil, so that even if they took a narrow view and limited it to commerce and agriculture their sphere of operations would not be much affected. One thing they had done and would continue to do was to organise from time to time lectures by gentlemen who were experts in particular subjects, so that they could take a proper line in dealing with questions which came before them. He had heard it said that the Society was nothing but a library and reading room, and he was told that only a day or two ago. While admitting that they had an excellent reading room and an excellent library, the latter with upwards of 30,000 volumes, Sir Crossley claimed that that was only one part of the Society's operations. The Society had not got anything like the support it was entitled to, and on that question Mr. Garnett was going to open a discussion, to which he hoped would be contributed the views of a number of those present so as to show in what respects the governing body had failed in the past to make the Society popular and to point out what they ought to do. He urged it was the duty of all colonists to join the Society and give it their support. There was no other organization in the colony which had for its object the purposes of this Society, and there was no organization either which could in the same way inform public opinion and assist in the progress of the colony.

For a moment or two he wished to refer to two subjects which were becoming very prominent, upon each of which it was necessary that they should have right views, and in which also this Society ought to take an interest and to take part in the discussion of them and try to guide public opinion in the right way. First they had been discussing for a very long time the railway to the interior, and if there was one thing more than another connected with agriculture and commerce it was this railway. Different views had been expressed on the question and it had been very much criticised; but if he were any judge at all of public feeling it seemed to him that public opinion now was almost unanimous that they must have a railway and that without a railway they could not to any satisfactory extent develop the resources of the colony. That was his own opinion and he confessed he could not see how this colony was to progress and become the great colony, which they hoped it would become, without a railway to develop its resources. But there was another point which they must not lose sight of as inseparable from it. That was the question of cost, and that, he took it, was the only question, because as soon as it was established that they could construct a railway from the coast-line to the interior of the colony and

connect it with the countries behind at a cost which it was within the means of the colony to pay, the whole problem would be settled and there could be no question that they must have a railway. It must be quite obvious to anybody who thought of it that it would never do to have a railway which would practically bankrupt the colony.

WEST INDIAN FEDERATION.

There was another subject which was also coming prominently before the public and which he thought the Society might consider. That was the question of the federation of the West Indies. It was a subject that had been considered from time to time; it had at one time bulked largely in the public eye, and interest in it had then waned, but the subject now seemed to be attracting a good deal of attention. It was a very important subject and one which they might with advantage consider. His own opinion, he was bound to say, was that eventually there must come federation of the West Indies, and he did not see how it could be prevented. Federation was in the air. It was a movement which had affected all the world, not only in politics but in other departments of life. For example, it had affected the commercial life of the whole world, as they saw in the creation of limited liability companies. Those of them who had got as far as middle age could remember the time when enterprises were carried on by individuals or a number of men in partnership, but that had been very largely changed, and in place of individuals carrying on commercial enterprises they were now being carried on by limited liability companies. And as they knew, that movement had affected this colony in common with the rest of the world. It was a movement that was affecting this colony and all the West Indian colonies in every department of life, and they could not escape it. The advantages of united action were so obvious that it was being taken advantage of all over the world. In politics the movement was very pronounced. It was seen in the Union of the Dominion of Canada, the great Australian Commonwealth, and only the other day in the Union of South Africa. And the movement not only affected their own Empire but was exemplified in the union of what was now the German Empire. It would thus be seen that this federal movement had been spreading over the world, and it did not appear that the West Indies could any more escape it than any other part of the world, and could no more resist it than one could resist the flow of the Demerara river. It therefore seemed to him that the West Indies must in due course become a West Indian Dominion just as the North American colonies had become the Canadian Dominion. How long that would be was another matter. It would not be very soon and whether he or many of those present would live to see it was a question, but that it would come and must come he had no doubt.

One objection which had been made, and which he had heard many times, was that they could not federate the West Indies because the various colonies had different interests. That was of course so. Each colony had its own particular industries and interests and those interests in every case were not identical with the others. But they had the same

thing in England; the interests of the textile manufacturers of Lancashire were quite different from those of the agriculturists of Norfolk, and the interests of the woollen manufacturers of Yorkshire different from those of the leather-makers of Northampton, and yet the whole of England was one Kingdom governed by one body, and the whole thing worked exceedingly well. It therefore seemed to him that the mere fact of the colonies not having identical interests in no way militated against the final accomplishment and successful working of federation. If he were right in his deductions it seemed to him that it was their duty to try to assist and direct the movement in the right way. The movement must come, it could be delayed by opposition or it could be expedited by careful action, and they in this colony and the West Indies should guide it in the right direction, so that when federation did come it would be with the least possible inconvenience and the maximum amount of good to the various colonies which would come within it.

THE WAY TO AN UNDERSTANDING.

To a certain extent federation had already commenced by the union of some of the islands—the Leeward and Windward groups, and with Tobago as a ward of Trinidad. He quite admitted that it would be utterly impossible for anybody to sit down now and draft a constitution for a West Indian Dominion. The course to be pursued was for the various colonies to find subjects of common interest on which they could unite for various purposes and this would gradually bring them closer together and eventually lead to union for all purposes. The islands in this part of the Caribbean had already united for one common purpose—quarantine—and he understood there was a movement on foot for some kind of common action in respect of Customs administration. That would go on and they would find from time to time various subjects on which they could work together and in this manner federation would gradually ensue. In connection with this subject there was one on which he thought all the colonies could unite with advantage; that was a Court of Appeal for the whole of the West Indies. As a Judge of one of the Colonies he felt great interest in this proposal. It was not a new proposal by any means. Twenty years ago it was first mooted. Barbados had actually taken steps to get a Court of Appeal for itself, but, if they would forgive him criticising them that scheme would not work unless there was reciprocity, and it must apply not to one colony but to the whole lot. But the scheme had so many things to recommend it that if it were brought prominently forward and properly considered the various colonies must see the advantage of it. Previously it was not possible as means of communication between the colonies were difficult, but now with better facilities for travelling and better means of access to the various colonies it could be carried out.

One objection made to it, and his friend Mr. Nunan gave utterance to it, was that there were various systems of law, particularly our own, and that the scheme could not be carried out until this colony had got rid of its Roman-Dutch law and adopted English law. He hoped Mr. Nunan would forgive him if he said that he did not agree with him. He

did not see that the Roman-Dutch law need for five minutes stand in the way of an Appeal Court if formed for the West Indies. They found the same thing in England. The House of Lords was the Supreme Court of appeal for England, Scotland and Ireland, but they found lawyers brought up in the traditions of the English Bench and Bar deciding questions of Scots Law, which after all was not very different from their own Roman-Dutch law, and if English Law Lords were able without having spent their lives in the study of Scots law to deal satisfactorily on appeal with questions coming from Scotland, he did not see why Judges of the other parts of the West Indies should not be able to deal as well with questions of Roman-Dutch law which came from this Colony. The number of appeal cases which involved questions of Roman-Dutch law were not very many. There was another very striking instance—the Privy Council. There they found a body consisting of Judges of eminence from various parts of the Empire dealing with all sorts of law. They dealt with Roman-Dutch law from this colony, South Africa and Ceylon, also with Hindoo and Mohammedan law and customary law from West Africa, where most of the property was held under the native customary law. And if, for instance, they got there an Indian Judge dealing with Roman-Dutch law, or a South African Judge dealing with Mohammedan law, which was actually being done, and as that tribunal was admitted by every one to be a most excellent and satisfactory Court of Appeal he did not think there could be any great difficulty in creating a Court of Appeal for this part of the Empire.

APPEAL ANOMALIES.

The creation of the Court of Appeal was manifestly desirable if only to prevent the anomaly of a Judge sitting on appeal from himself. In nearly all the colonies if there was an appeal the Judge who tried the case in the first instance had to sit on the hearing of the appeal, and as he had taken the trouble to carefully consider the case and devote his whole mind and ability and learning to it it was very difficult to convince him afterwards that he was wrong, and the number of times when he agreed to reverse his judgment were very small indeed. He had done it himself, but it was only when some question was argued before the Court of Appeal which was not argued in the first instance. If only from the point of view of getting fresh minds to bear upon it a Court of this sort was desirable. That was one of the first steps they might take towards federation. If they could bring that about, and he did not think that there was anything in the constitution of the various colonies which would prevent it, the scheme could be brought in in a very short time. He commended these subjects to them as questions which the Society might take up and discuss, as they were practical questions which were being mooted now for the benefit of the colony.

MR. F. V. MCCONNELL'S DEATH.

He must remind them of a very sad loss to the colony in the death of Mr. Fred V. McConnell, who was for many years a member and supporter of the Society, and he proposed that they should pass this

resolution : "That this meeting of the R. A. & C. Society of British Guiana expresses its deep regret at the death of Mr. Fred V. McConnell, an honorary member of the Society for many years, a generous benefactor of the Museum and a warm friend of the colony in whose natural history he took a keen interest, and that the respectful condolences of the Society be conveyed to his widow and relatives in their sad bereavement."

Professor Harrison, in seconding, said he did so with deep regret. The resolution was then put and carried unanimously.

Mr. Mewburn Garnett asked that the members join with him in a vote of thanks to the President for his able address which had covered so much ground.

Mr. Nunan, seconding, said that the federation of the West Indies was a project that could be carried out by the care and co-operation of different possessions. The Appeal Court was a matter that could be dealt with at once. He was an active supporter of the Appeal Court for several years. The chief opposition was from one of the Chief Justices of the various possessions, but he thought the fact that Sir Crossley Rayner had acquiesced in the most recent proposal put forward put the matter on a practical basis at once.

HOW TO POPULARISE THE SOCIETY.

Mr. Mewburn Garnett, who was warmly greeted on rising, then introduced the discussion on "How best to popularise our Society." He said: "Never in the history of our Society has it been more necessary to consider this question, for apathy and indifference are slowly but surely sending us downward. Are we to sink further? Most assuredly no, yet the attendance here this afternoon gives us little encouragement. Surely, on the occasion of a Presidential address and when every effort is being made by means of public discussion to restore new life into the Society, I say that on such an occasion a large attendance might reasonably have been expected.

"Whilst Agriculture and Commerce have found protection elsewhere there is yet ample scope for the discussion of matters which directly concern these two great factors of prosperity.

"I referred to the apathy and indifference which exist towards our Society; this is very marked on studying the list of members, for both in Church and State many names are absent which should appear on the list. Indeed, never since I have been on the Executive Committee have the names of the holders of very high offices in our Anglican Church been so conspicuous by their absence. We undoubtedly want subscriptions, but we want sympathy still more.

"Now, we cannot force any one to join our Society, and it is only by offering greater attractions that we may expect them to do so. I would suggest that enquiries should be made of those who were once members for the cause of their resignations.

"I am much struck by the absence of young members in our Society, and to encourage them I would suggest that every *bona fide* clerk or typist, be he or she in Government employ or in Water street, be admitted as special Clerical Associates at an annual subscription of \$4.

"Several suggestions have been given for popularising the Society by those who have not the courage openly to express their opinions, and I can sympathise with them in their reticence for the community is more ready to criticise than to assist, and there is ever amongst us the mean assassin with his stiletto in the shape of the anonymous correspondent.

LIBRARY METHODS.

"But let me turn to the suggestions. Most of them have been made in connection with the library. Now our most ardent supporters cannot but own that however excellent our books of reference, however large our assortment of other works, our methods are antiquated, and that we are not keeping pace with the times. It is recommended that our library should be run on the same lines as the Free Library, where the arrangements are similar to those of the Free Library in Westminster, London. The Carnegie Free Library of this town is an admirably conducted institution which calls for the highest praise of those who administer it, and there is no reason why our Society should not be equally up-to-date. Our librarian is admirably suited to the post he holds; he is a typical bookworm and takes the keenest interest in his work, whilst the lady who assists him, who I know has rendered help in adding to the list of lady members, would very soon be able to grasp the details. As compared with the Free Library, we have attractions which possibly are not generally known. Our list of periodicals is much longer. Our rooms are open every day and all day with a part of Sundays and holidays. Our meetings ought to be of general interest. Our loans of books are larger than the Free Library, being: 3 Vols., 2 sets of periodicals at a time for members; 2 Vols., 1 set of periodicals at a time for associates. The librarian is prepared to give information on a variety of interesting subjects. There is an admirable collection of books for young people, and all under 16 years of age can join the Society by paying 50 cents a quarter, which entitles them to take out one book at a time; there are only three such members now on our list. Lastly, new books arrive every mail.

"I am told that the novels ordered are not in keeping with the feeling of the members. The subject is undoubtedly a delicate one, and I hardly know how to approach it. Our institution is accused, how rightly I cannot say, of a mawkish false delicacy. I am told that the novels ordered are too much of the Sandford and Merton type; that the age requires strong writing, and that the trend of thought has become so metamorphosed in these later days that what shocked the early Victorians is as babes' food to-day. I am not here to argue these matters, but one thing is certain, what the reading public want they will have, and the result has been the formation of small circulating coteries who import books for themselves to the detriment of the Society. If

what is said is true, and if those books are necessary, then let there be a sub-committee for the purpose of dealing with the matter. The difficulty we have to face is not new; it has already presented itself to Mudie's, Smith's and other libraries, and their manner of dealing with it could be adopted by us.

VARIED SUGGESTIONS.

"It is suggested that we can with advantage advertise our Society by bringing its attractions to the notice of such persons as are gradually discovering the existence of Guiana, and that a short circular and tear-off application for temporary membership should be sent to every new arrival. Those who travel intellectually invariably make first for the Museum of a town, and many have told me of the pleasure they have derived examining the collection in this Museum, whilst hardly a day passes but enquiries reach us on a variety of subjects. It is also suggested that there should be some sort of gathering once a month, when opinions of the various topics of the day might be discussed (a conversazione, to give it a more high-flown name). Doubt is expressed as to sufficient food for discussion, but if those who suggest it are really in earnest there is no fear. For instance, the serious-minded or clergy would have a topic which is ever with them 'Ritual and Church adornment as a help to devotion,' or some such equally serious matter. The Agricultural and Commercial sections would find 'Guiana and how to develop it' a wide field. There are also topics such as 'The Absentee Proprietor from a Non-sympathetic Point of View,' 'The Absentee Proprietor' by One of Themselves, 'Guiana as a Field for Rapid Fortunes' by Optimist, 'Guiana, its Impossibilities and how I Dread to Lose my Little All,' by Pessimist.

"Then there are topics for ladies such as 'How can Women Popularise the Society,' 'Should Women Smoke?' 'Georgetown and my Friends.' If truthfully stated this would, to say the least of it, be interesting. The tango too would be sure to call for much entertaining discussion. (Laughter.) A lady writes me suggesting monthly meetings for lectures and music. On every occasion the suggestions are accompanied by opinions that such meetings should be in the evenings, that refreshments should be provided, and that free admission should only be allowed to members whose friends would also be welcome on payment of a small entrance fee. I have quoted several of the suggestions made me and there are doubtless many here who would add to them. I am sure every member of the community would be sorry to see this old institution totter, and it rests with us all to pull our weight and restore it to its former prosperous position."

THE DISCUSSION.

Mrs. Stephenson stated that she thought it would be a very good thing to have special monthly meetings where members would express their opinions, not gossip or scandal or anything of that kind, on books we have read and the good we might perhaps do to others.

Mr. Sherlock said that the subject was a delicate one and perhaps it was a case of "fools stepping in where angels fear to tread." It seemed

to him that the reason why the Society was not popular was first because it was poor, and secondly because there were very few people in the colony who really took an interest in it. It was perhaps a hard thing to say, but the more one went about Demerara the more one was asked to take part in if he might say so, public life, the more it struck him that few people really cared for the colony and were anxious to support it. Perhaps it was an age where if he might say so, sentiment had disappeared, but it seemed to him that the Royal Agricultural and Commercial Society should be supported liberally and ungrudgingly by every citizen of Georgetown. He would suggest that one way to improve matters would be to write to all those people who ought to be members and were not, and publish their answers.

Mr. Nunan said he had some statistics which he had asked Mr. Rodway to make out for him and which he had intended to hand to Mr. Garnett but did not because he was late. His idea was that the leading members of this community who were not members of the Society would not amount to more than half-a-dozen and they would include some of the biggest salaried persons in the colony and one or two dignitaries who ought to know better. As to writing to those who were not members that was done two and a half years ago and met with a magnificent response. He came now to a little history of the Society. The beginning of 1910 found it faced with the opposition of a free library and in 1910 it lost about 100 members and associates, so that towards the middle of 1910 it had about 331 members. At the end of 1910 the directors having put their shoulders to the wheel and everybody else having helped they put it back to 432. Next year it was 495, and the next 494, and then last year 478. But the better class and wealthier people had in many cases moved away and not been replaced. He did not think the membership could safely be got far beyond 500. In one case he did not see any necessity for popularising the Society; it should not be made too cheap, and he did not think that the Water street clerk who did not come in at \$5 would come in at \$4, and he would not be worth having. The Society never passed 500 until the year before last, and several times during that year it went up to 516. The normal membership was 416, but he thought they could put it back to 500, but not beyond. What else did they do?

VALUE FOR MONEY.

They were bankrupt in the middle of 1910. They put the revenue up to \$5,434 the next year, the next it was \$5,346, and in 1913 \$4,762. How did they do it? By giving value for the money. Every one who paid \$10 or \$5 got value many times over for it. The library as far as possible was brought up to date as far as the monthly arrivals went. They spent about £100 in getting modern classical novels. They revised the magazines and made economies where possible. Mr. Garnett pointed to one serious defect in their equipment and that was the library. They thought two years ago that they could meet that by making an appeal to the absentee proprietors. They had done very little

in direct contributions to the colony though many of them drew considerable revenue from it. They sounded the principal proprietors and found that they were willing to make a hearty response. The drought continued and there was a bad year for sugar. He did not think any of them had the heart to press the matter just at that stage, and they thought that in a prosperous year for sugar they could get £2,000 or £3,000 from the big proprietors to help to improve the library. The Museum did not come into this list of finances, but there something could be done. The Government gave them instead of the former \$4,500, \$2,000, part of which went to the salary of the honorary curator. In any other country the museum was a matter for the Government or the Municipality, and he thought in no matter in this country had the Government been more short-sighted and more stingy in the wrong place than in its treatment of their Museum. They had given a conversazione, lantern lectures, and refreshments and attracted members. They would continue. Instead of three or four dry-as-dust papers a year, which used to be the case for many years before 1910, they took up subjects vital to the colony and made them interesting. He thought Mr. Garnett had taken too pessimistic a view of the gathering there. It was a very considerable number, and it must be remembered that it was not known there was to be a presidential address. He was quite sure that many would not come because they thought they would have an informal discussion about popularising the Society and he did not think many were in favour of any scheme of popularisation which would lower the value of the membership. The Society had a great prestige, and they were not to go into the highways of the streets to ask for members. They should instead limit the members and exact a higher qualification. They should try to attract only those who would be useful to the Society, and if they went and hauled in all and sundry, willing to pay \$5 or \$10, which, however, he did not say was Mr. Garnett's suggestion, they would come to sure disaster.

INFLUENCE OF "TIMEHRI."

They made the Society efficient by the revival of "Timehri," which made a profit last year of \$195. The year before by the set policy of the directors they went to an expenditure of \$500 for the purpose of placing the facts of the colony so far as they knew them before the Governor on his arrival and by advertising the resources of the colony and they circulated 1,000 copies. That cost \$529 over and above revenue. Even taking that into account, the deficit for three years on "Timehri" was \$404, and against that must be the fact that the Society undertook to pay 8d. a copy for the number sent free of three issues and a shilling a copy thereafter. It had done a great deal to popularise the Society and if they divided that \$404, the total loss on three years, and set it against the 1,760 copies circulated for the benefit of the colony, he thought it would be found that the annual cost of \$135 was well repaid. In that sense the Society had done the work of popularising. They had made the Society known throughout the West Indies and wherever the scientific world read the

English language. As regards the present they had sufficient to pay current expenses and leave a substantial balance. Even last year when the hon. secretary was away most of the year, and although Mr. Laing had to be away, they paid off \$500 of the outstanding debt in making permanent improvements. They made a ladies' and gentleman's room, and a smoking room, and the price had been about \$600 and they gave a most hearty welcome to the Governor on his arrival with electric signs and lights. The Society was solvent and had been so from the beginning, but one thing would make it insolvent, and that was if it went back to the old policy that the idea of the Society was to have \$12 in the till at the end of the year. A Society like this with vast property on the finest site in Georgetown, insured for \$20,000, with collections worth \$100,000, ought not to be afraid to go into debt \$1,000 for the purpose of making permanent improvements. They went into debt \$660 in 1911, and they sent up the revenue from \$4,110 to \$5,434. It was only by a business policy and by appealing to the business instincts of people and giving value for money, by maintaining a high standard of efficiency all round and putting their library in order, that they could maintain their reputation throughout the West Indies.

LETTERS TO THE EDITOR.

THE LATE MR. F. V. MCCONNELL.

SIR,—To a large majority of the members to-day the name of Mr. F. V. McConnell is no doubt an unfamiliar one, but I should wish to point out that for many years, soon after my being appointed Curator of the Museum in 1886, up to 1898, there was no one more interested in or more closely identified with the development of that institution than the keen Naturalist who has just passed away.

During those years collecting expeditions, one after another, from the Barima to the Corentyne, were undertaken by me largely at Mr. McConnell's expense, the collections of birds alone being shared, and all else coming to the Museum. He, from his keen interest, was always present; and though privation often was a necessary adjunct of such trips, he never allowed any such possibility to divert him from the accomplishment of the object aimed at. As a memento of smaller trips, the specimen of the electric eel, which is far and away a record of its kind, being 7ft. 3in. in length, obtained in the North West District, still remains in evidence in the Museum.

Of the longer expeditions, such as the savannah and first Roraima trip of 1894 and the second Roraima trip of 1898, the first jointly with the Museum, and the second entirely at his own expense, the Museum shows to-day a large number of typical specimens, which have been obtained under no other collaboration. Much of the collections thus obtained served the purpose of exchanges for other desirable outside material; and material, such as the constituent barks of the urali poison, was of more than passing physiological interest in many centres of research.

The typical biological collections on the summit and about Mount Roraima, from their special interest and wide significance, were handed on to the Royal collections, Kew, and the British Museum, where, with the aid of many continental experts, the results were summarised and issued as special reports of the Linnean Society in its transactions in 1901—reports which, in conjunction with the earlier results of im Thurn's expedition, are records in Tropical Biology of the higher altitudes.

Beyond this, the Society evidences to-day a further illustration of Mr. McConnell's munificence in the quite unique series of enlarged photographs, taken by himself, of views illustrating the physical features and the native peoples of British Guiana, mainly of the hinterland, which I hope will yet furnish a part memorial of his name.

From a local point of view I could mention instance upon instance of his furtherance of the knowledge of the biology of the colony, as, for example, the opportunity for research on the migratory birds of the colony contributed by me to "Timchri"; and later on the micro-

mammalia, mainly of the great savannahs, published by the *Annals and Magazine of Natural History* for the British Museum on collections made by me, altogether unique of their kind.

This record, however, is but a very incomplete one of his wide interest in the natural history of the colony; and the national collections of the British Museum of England, for a long course of years, are indebted to him for whole series of much wanted and often altogether new material—new both to the British Museum and often to Science—illustrating the ornithology and mammalian life, mainly, of Guiana.

For a long course of years he has been getting together as typical a collection as possible of the avifauna of the colony, and for some years now, in collaboration with the officer of the British Museum who is the recognised authority on Neo-tropical birds, has been preparing for publication a work that would have been the most complete of its kind—but for his untimely death.

Outside of his contributions to the Society and to science I have no need to write. All who knew him will mourn the departure of a fine and accomplished gentleman, unaffected and unpretentious; of a comrade, altogether loyal; and of a friend, always kindly, trustworthy and honourable.—I am, Sir, yours,

J. J. QUELCH.

Melville,

January 26, 1914.

WEST INDIAN UNIFICATION.

DEAR SIR,—I understand that the Chairman (His Excellency) invited me to express my views after Mr. E. Davson's lecture at the Royal Agricultural and Commercial Society's Rooms on the subject of "The West Indies: Their Common Interest and Imperial Aim." I had already left for an urgent Committee meeting, but I should like to say, in view of this invitation of which I feel the compliment, that I agree with Mr. Davson in the main. We were both, I think, as fellow-delegates to the West Indian Agricultural Conference of 1912 at Trinidad, greatly impressed by the growing feeling of West Indian solidarity evidenced by the proceedings of the Conference. This feeling was apparent not only in the official part of the programme but in the unofficial and more or less spontaneous proceedings in which Mr. Davson took no small part. I think we were equally impressed by the minor obstacles in the way of Federation which the Conference revealed and to meet these as far as Agriculture was concerned some of us drew up and succeeded in carrying resolutions to secure consultation and fully representative arrangements in regard to the holding of future Conferences and to enable important items to be dealt with more comprehensively by Committees of those interested instead of being almost shut out through the congestion of a lengthy business programme dealt with consecutively. The Imperial Commissioner, Dr. Watts, whose difficult

task was ably discharged, appreciated the assistance afforded to future work by the adoption of these proposals.

The hospitality of Trinidad was prodigious and the physical energies of the delegates were shown not to have suffered by birth or residence in a tropical climate, but even a lawyer like myself fled appalled from a concluding dinner with twenty-six speeches attached to the menu. If the business element reduces the hospitable displays to a very minor room and importance in West Indian and Canadian-West Indian Conferences of every kind in future we shall have less sentimental patriotism and Imperialism, fewer speeches of a congratulatory and laudatory type, and more business done. I think some understanding should be arrived at on that point which will not give offence to the generous instincts of any selected colony. Speech-making at Conferences is perhaps not a vice peculiar to the West Indies, but it is particularly virulent in these parts.

One of the causes of the resolutions above referred to (which I believe I drew up) was the feeling that notwithstanding the efforts of Dr. Watts, British Guiana was a little out in the cold. Sugar chiefly interested our delegation, and sugar had to be cursorily dealt with in part of an afternoon, during which Professor Harrison, had not the Chairman and the meeting waived the restriction in his particular case, would have had to deal with three or four years of his work and that of his able subordinates in a ten minutes' speech. The courtesy of the waiver in favour of so distinguished and dominant an authority only revealed the more clearly the inadequacy of the space available for what is one of our vital concerns in this colony. To British Guiana problems such as those of balata, timber and cattle, any West Indian Conference whatsoever can give but a small contribution. In a word, the elementary fact stands out that British Guiana has vast interests in which the rest of the West Indies is not concerned or is only concerned indirectly or to a minor degree. What are our minor industries are the major industries of many of the smaller and some of the larger islands. Our future major industries except sugar and rice have no insular equivalents. To speak of British Guiana in the terms of a West Indian island is a mistake. It is a great continental possession of the Crown some forty-five times as large as Trinidad and some twenty-three times the size of Jamaica. In regard to this I was glad to read with the rest of the public in the press of February 10th that His Excellency had expressed the views of its possibilities (pars. 24 to 28), which "Timehri" had been advocating for the past three years and that the actual route for a trunk railway recommended by Mr. Bland was that suggested even as late as last July by the contributors to that magazine, who, however, never anticipated such rapid local development or such light expenditure on labour as that expert indicates.

GUIANA'S PECULIAR POSSIBILITIES.

When ample security is provided for the protection of existing industries, at all events until they can be replaced, and when practical

schemes of colonization, irrigation and drainage have materialized, and as His Excellency no doubt is considering at the moment as a supplement to his present project, or even as its accompaniment, the colony by acting as a united community, by taking the necessary risks, and even by facing large initial financial sacrifices, will secure the full realization of its legitimate ambitions. No doubt those to whom His Majesty has entrusted the privilege of advising him will give him experienced and cautious counsel. These ambitions are beyond the possibilities of even the largest and richest of the West Indian islands.

While emphasizing our distinct interests and referring to the necessity for attending to them without reliance on anybody but ourselves, I think the fate of British Guiana will always be bound up with that of the British West Indian islands and that every effort should be made to promote co-operation and closer union. The Conferences on Agricultural, Quarantine, Customs and other questions have shown what can be done without political union. Political union is distant but I do not see why it can be called wholly unrealizable. West Indian particularism is vanishing and in the past has owed a great deal to the particularism of the various administrators quite as much perhaps as to the short-sighted jealousies of the little island communities. The creation of a West Indian Chamber of Commerce for which Mr. Davson has laboured so energetically and successfully will do still more to call attention to this essential identity. Only with some megaphone of central authority can we make ourselves heard above the roar of the modern commercial world.

THE COMMON COURT OF APPEAL.

The West Indian Appeal Court if created and the abolition of Roman-Dutch law will do their part. The fact that bench, bar, and business community nowadays combine to forget the existence of Roman-Dutch law since the retirement of the older school of Judges (many of whom like Sir Henry Bovell had given serious study to our Common Law) does not render the continuance of its debris any the less a menace and a danger. The system is anomalous and a colony where one law exists and another law is administered by tacit consent can hardly be said to be equipped for modern commercial requirements. It certainly is not fitted for intercolonial or international trade. Nothing scares off a capitalist or investor more than any uncertainty as to the law. Local merchants take the precaution of staying out of litigation. Only last month English law was introduced as regards sale of goods. The Explanatory Memorandum set out in some detail the radical alterations which it effected, but the Ordinance hardly created a ripple on the surface of commercial life. Its effect had been anticipated by the practice of merchants, who however do not wish a succession of cases like *Synada Bee v. Craigen* to call attention to the necessity for reform. The uncertainty and confusion of the law cannot be evaded by our pretending that the common law is English or that piecemeal attempts to alter it have not had the most curious consequences.

HEADQUARTERS OF THE APPEAL COURT:

The question of the West Indian Appeal Court will not, I think, be easily allowed to retire again into the limbo of suspended proposals. It is necessary to provide for the fact that Trinidad has three very busy Judges, Barbados only one, Jamaica (which may under the able and tactful administration of Sir William Manning cease to plough a lonely furrow and rejoin for many purposes her West Indian sisters) only two, and that British Guiana is overstaffed in the legal line. To meet local requirements, to conciliate local prejudices and to enable British Guiana to do with as many Judges as Jamaica, a colony with three times its population, it will probably be necessary to carry out the entire scheme at once and to provide any Court of Appeal with a President as extra Judge. Nothing should be done to diminish the prestige of the new creation by false economy or by any makeshift arrangement. But these are matters which can only be decided by friendly consultation between the West Indies and the Colonial Office, assisted perhaps by a conference of West Indian Judges and law officers. Where whole measures, however, are more convenient and equally economical I am no advocate of half-way measures. Jamaica if it accedes, which cannot be anticipated with confidence, is only a week by sea from Trinidad even by the Royal Mail circular route, and Trinidad is the natural headquarters of any Appeal Court.

We shall shortly have one system of civil law and procedure throughout the West Indies, except as regards St. Lucia, whose codes are sufficiently comprehensive to make reference to the *Coûtume de Paris* merely pedantic. We shall have one system of Criminal Law, that is the Criminal Law of England. No experienced Judge or lawyer will advocate any change or think he can improve upon the work of the great criminal Judges and lawyers of the Empire. I have never seen in the West Indies any attempt to improve upon the English criminal procedure (for attempts to improve upon the substantive criminal law have been luckily rare) that did not lead to expense, doubt and confusion.

If the Conference of Customs authorities were assisted by some leading Imperial expert in Customs and kindred economic matters we should be likely to make somewhat more rapid approaches to commercial understanding and to a uniformity in Customs matters. At present the West Indian tariffs are often unscientific in the extreme, and only some officer of the very highest authority would be likely to secure the adoption of any radical change. I am sure our own very capable Comptroller would agree with this.

A HIGH COMMISSIONER FOR THE CARIBBEAN.

The suggestion of a High Commissioner for the Caribbean is worthy of further consideration. If such a step were taken the post would probably be doubled at first with that of the Governorship of Jamaica, where the Commissioner no doubt would have the assistance of a deputy, as in the similar case of the High Commissionership for South Africa which was at first combined with the Governorship of Cape

Colony. Capetown until recently was further by time from Durban than Kingston is from Georgetown. A week is a small matter in the West Indies. They are at present over-governed.

I have jotted down these few hasty remarks at the close of a very busy day as they represent what I probably would have expressed after the lecture had I been present when called upon and do not think I should withhold them as my opinion was invited. I went to the meeting, however, as a learner and a student and after eight years' study of West Indian problems have not learned enough to dogmatize about any of them. I think the counsel of St. Augustine realizable: "In great matters unity; in smaller matters diversity; in all things brotherly love (*caritas*)."—I am, Sir, yours faithfully,

JOSEPH J. NUNAN.

February 11, 1914.

AN AMENDE.

Berbice,
British Guiana,
May, 1914.

DEAR SIR,—With reference to my last article published in the September number of "Timehri," "Fan Palms and Pond Flowers," Professor Harrison, Director Department Science and Agriculture, draws my attention to an injustice to the Head Gardener of the Botanic Gardens, Mr. J. F. Waby, F.L.S.

It seems that the Berbicians owe these pretty Gardens to Mr. Waby's well-known skill and taste, and not to the late George Samuel Jenman.

Unwitting as the oversight has been, I am now the more pleased to be able to give Mr. Waby the credit he deserves for having fashioned this "beauty spot." There is some consolation, however, in the fact that Mr. Waby's abilities are so well-known that I feel that the omission, regrettable as it is, can do him little or no harm, while the work of the late Mr. Jenman can well afford to be shorn of the credit which must be given to the man who, with tender care and skill, raised these Gardens for the pleasure and interest of the people of Berbice. I should be much obliged if you would kindly publish the above, so that Mr. Waby in his retirement may feel that justice has been done to this branch of the many useful works he has performed during some 40 years' service in the West Indies—for which service he has lately been decorated with the Imperial Service Order.—I am, etc.,

EDGAR BECKETT.

OUR LATE PRESIDENT.

On May 22nd of this year Sir T. Crossley Rayner, Kt., K.C., Chief Justice of the colony, was taken off with tragic suddenness in the midst of transacting official duties in his own Court.

Many a warm tribute published at the time from Bench and Bar and prominent citizens reflected the high esteem in which he was held by all who were privileged to know him in the discharge of his legal functions and in the social and religious life of the colony. The Royal Agricultural and Commercial Society in electing him at the end of last year to the highest honorary office was but acknowledging the great interest in its work shown by the late Chief Justice and his many labours for the advancement of those aims which the Society was founded to promote.

On the revival of "Timehri" with the issue of the first number of a new series in July, 1911, Sir Crossley Rayner, then Attorney General, was among the contributors with an article on "A Visit to the Kaieteur Falls," an account of the journey he made in September, 1910, in the days before the convenient and comparatively quick means of travel now established were in existence. At that time, as he remarks in the article referred to, not more than fifty people had ever seen this wonderful and impressive sight and only two or three records of visits paid to it had been written.

The interesting lecture on his journey, illustrated by lantern slides, given by Sir Crossley Rayner in January and repeated in February of 1911, must still remain in the memory of most members of the Society. Again in July, 1911, at the Reception of His Excellency the Governor and Lady Egerton in the Society's Rooms, he contributed to the significance and interest of that occasion a series of lantern views of the colony from photos taken by himself and by Professor Crampton, of the American Museum of Natural History.

In 1912 he became one of the Directors of the Society and finally in 1914 he accepted the office of President. He brought to the work of these offices that conscientious performance of duty and painstaking care which were prominent characteristics of his life, official and private, sparing neither time nor labour in doing whatsoever he undertook.

In this issue we print the inaugural address given by our late President on 27th January, 1914, in which he offered a strong plea for the Society and vindicated its place in the community against current misconceptions. His advocacy in that address of Railway Development and West Indian Federation, and his especial insistence on the easy possibility as well as advisability of a Common Court of Appeal in spite of differences of legal codes in the various colonies, add an authoritative voice in favour of a movement which is gathering way and weight for

the future benefit of the West Indies. That his term of office was so grievously shortened by the hand of death cannot but be a matter of deep regret for the promise that his few months in the chair had given. So the Society joins with those who mourn the loss of a colonist steadfast, sterling and right-hearted; a Judge whose decisions were always without fear or favour and animated by a genuine desire to find in accordance with the equitable view of facts; a man whose generous largeness of heart impressed his professional brethren, and whose unfailing uprightness of view was a strength to the moral life of the community.

PROCEEDINGS OF THE SOCIETY.

Meeting, December 17th, 1913. *Elections reported.*—*Members.*—Mr. Jas. S. Marshall, Hon. C. Clementi and J. A. Varey. *Associates.*—Messrs. S. W. Cleavin, V. de Abreu, F. U. Tronchin, T. B. Reed, Junr., A. M. Pereira, Dr. R. S. Millar, W. H. Richards, José E. Certad, D. Bentham, Inspector Craig, R. S. Delgado and A. A. Dummett. *Lady Subscribers.*—Misses May Castor, M. B. Crowe, Grace Newsam, Olive Rose, Lorna Rodway and Mrs. A. P. Sherlock.

The President gave a valedictory address.

The Office-Bearers for 1914 were duly elected, including the President, Sir Crossley Rayner.

Mr. Mewburn Garnett gave some interesting “Reminiscences of old times and of the upheaval of the Society in 1886,” for which he was warmly thanked by His Excellency the Governor and the meeting.

A vote of thanks was also accorded to His Excellency the Governor and Lady Egerton for their presence at the meeting.

Donations to Library.—10 volumes from Mrs. Frankland and volumes and 2 periodicals from Hon. J. J. Nunan.

Meeting, January 27th, 1914. *Elections reported.*—*Associates.*—Messrs. Alex. Rose, H. P. Christiani, George Rodger, Egbert Humphrey, S. Heald, J. H. Kernaghan and F. E. Phillips.

A resolution expressing the regret of the Society at the death of Mr. F. V. McConnell was carried unanimously and the Secretary directed to forward a copy to his widow and relatives.

The President, Sir Crossley Rayner, gave an inaugural address, for which a vote of thanks was accorded.

Mr. Newburn Garnett initiated a discussion on “How best to popularise the Society.”

Several members, including ladies, took part in the discussion, at the conclusion of which the President said their suggestions would be considered by the Directors.

Meeting, March 18th, 1914. *Elections reported.*—*Members.*—Messrs. H. J. Taylor, H. K. Sisnett, G. L. B. Gall, F. A. Long, R. R. Patea, P. M. de Weever and S. H. Bayley. *Associates.*—Messrs. G. S. Dragten, Harper, L. M. Nightingale, Albert Fry, A. H. Ferry and Albert Edwards. *Lady Subscriber.*—Miss Eaton Shore.

Mr. E. A. W. Sampson spoke of the desirability of allowing a larger number of periodicals for the evening, and the President stated that the matter would be considered by the Directors.

The President informed the meeting that arrangements were being made for a *Conversazione*.

A letter from Sir Charles T. Cox thanking the Society for electing him an Honorary Member was read.

Mr. J. Rodway told the "Story of our Constitution" for which a vote of thanks was accorded.

Meeting, July 15th, 1914. *Elections reported.*—*Members.*—Messrs. J. H. Henderson and R. M. Davy. *Associates.*—Messrs. A. Gilbert, J. H. Ho-a-Hing, C. T. Uchlein, A. D. Hymans, A. D. Denny and D. J. Bell. *Lady Subscriber.*—Miss Quick.

The Vice-President (Hon. J. B. Laing) said that since last meeting they had to deplore the sudden death of their President, Sir Crossley Rayner, and it was agreed that a letter of condolence be forwarded to Lady Rayner. He also spoke of the death of Mr. Arthur Summerson who had been a Director and a leading member of the Agricultural Committee for many years; it was agreed to forward a letter of condolence to his widow.

The Librarian stated that the Book Committee had gone over the class of Fiction with a view to exclude obsolete and worn-out books and that a revised Catalogue of Fiction was being printed. He also reported that the Directors could not see their way to carry out the suggestion of Mr. Sampson.

The Chairman spoke on the desirability of a fruit export, especially of bananas and oranges, and hoped that something would be done in the near future.

Meeting, October 13th, 1914. *Elections reported.*—*Members.*—Messrs. W. L. Harris and Alex. McAndrew. *Associates.*—Dr. L. J. P. Clavier, Messrs. O. R. Bennett, G. F. Messervy, H. E. Ennis, A. B. Allt, P. W. King and John Lawson. *Lady Subscribers.*—Mrs. R. J. Johnson, Miss Macquarrie, Mrs. C. E. Buck and Miss Bridge.

A Gold Medal awarded to the Permanent Exhibitions Committee for exhibits at Toronto was exhibited.

The Hon. J. J. Nunan gave a lecture on "The Campaigns of France and Germany."

At its conclusion His Excellency the Governor moved a vote of thanks, which was warmly accorded, and spoke of the loyalty of the Local Forces.

The President also praised the lecture and thanked His Excellency the Governor for his presence.

Meeting, November 12th, 1914. *Elections reported.*—*Members.*—Sir Charles Major and Mr. G. E. Chamberlin. *Associates.*—Rev. W.

Rhodes, Messrs. Geo. King, F. Cabral and J. A. Campbell. *Lady Subscriber.*—Mrs. Bourke.

The President spoke of the deaths of Messrs. D. M. Hutson and Jos. Monkhouse, and it was agreed that a letter of condolence be forwarded to Mrs. Hutson.

The Hon. C. Clementi gave an interesting lecture on "The Causes leading up to the Fight with the Germans at Tsing-Tau."

A vote of thanks was accorded with acclamation.

Lecture, February 10th, 1914. Mr. E. R. Davson read a paper on "The West Indies; Their Common Interest and Imperial Aim" before a large audience including His Excellency the Governor, who introduced the lecturer and also spoke on the subject. The President, Sir Crossley Rayner and others took part in the discussion.

Conversazione, March 31st, 1914.

An immense crowd filled the Reading Room and flowed into the Museum, for it had been announced that Her Highness Princess Marie Louise was to be present and that His Excellency the Governor would give a Lantern Lecture on his late trip to the Interior.

An item on the programme was the presentation to His Excellency the Governor of an illuminated address from the people of Southern Nigeria.

The President, Sir Crossley Rayner, welcomed Her Highness and spoke of the circumstances under which the Society was permitted by Queen Victoria to use the name "Royal" and how Her Majesty became Patroness. He then reviewed the work done by Sir Walter Egerton in Nigeria.

The address having been duly presented, His Excellency made a few remarks on Nigeria and then lectured on the proposed Hinterland Railway. The lecture was illustrated by a large number of lantern views, a few of which had been prepared from photos taken by the Princess and the others by His Excellency.

A vote of thanks, with acclamation, was carried on the motion of Hon. A. P. Sherlock, seconded by Hon. C. F. Wieting.

Refreshments were provided.





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