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NOTES
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NOTES

FROM THE

LEYDEN MUSEUM

FOUNDED BY THE LATE

Prof. H. SCHLEGEL,

CONTINUED BY

Dr. F. A. JENTINK,

Director of the Museum.

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NOTE I.

SYSTEMATIC MONOGRAPH OF THE ATLANTIDAE
(HETEROPODA) WITH ENUMERATION OF THE
SPECIES IN THE LEYDEN MUSEUM

BY

Dr. J. J. TESCH.

(With plates 1—5).

Having recently ¹⁾ tried to bring some order into the great confusion, existing in the systematic literature on the Heteropods, and to eliminate some of the difficulties, which the investigator of this group of animals is sure to encounter with, I have been convinced, more than anybody else, that my study could have nothing but a provisional value, and that a firmer base could only be obtained by means of continued labour, and comparison of more material.

For a systematic revision I have chosen the family Atlantidae. These animals with their tiny, inconspicuous shells, have received but little attention, and after Souleyet's memorable work, more than half a century ago, only very few naturalists have dealt with the group. Among them I may name Gould, Smith, Oberwimmer, Vayssière and myself. Yet it may safely be said, that the discrimination of the species is perhaps more difficult than in any other family of the Heteropods.

Mr. P. J. Buitendijk presented, shortly ago, to the Museum, a collection of plankton, brought together, almost

1) J. J. Tesch. Die Heteropoden der Siboga-Expedition, Siboga-Expeditie, Monogr. LI. 1906.

exclusively, in the Indian Ocean and the Red Sea. The study of this material has been a most laborious task, as I had to search for the small Atlantidae among innumerable quantities of Copepods, Ostracods, Cumacea, etc., with which each of the glass vessels was crowded. The collection, originating from the surface of the Ocean, is rich in young forms and in not full-grown specimens, which seems to point to the fact, quite as in the Pteropoda, that the adult specimens of the Atlantidae, and probably of all the Heteropoda, are comparatively rarely found at the surface, and generally prefer deeper zones.

I should not have been able to bring my study to a rather satisfactory end, if Prof. L. Joubin had not most kindly sent to me, on my request, the valuable types of Souleyet, which are deposited in the »Muséum d'Histoire naturelle» at Paris. I beg this gentleman to take my sincere thanks for the great service he has rendered me. Taking into account its long preservation, for seventy years, in alcohol, the collection proved to be in an excellent state. Unfortunately, two of Souleyet's species, *Atlanta quoyana* and *Atlanta involuta*, were not represented, while a third (*Atlanta depressa*) had its shell quite dissolved. So, there remains some uncertainty, in my opinion at least, about the two firstnamed forms (which are neither in the British Museum); on the other hand, I have been fortunate enough to recognize *Atlanta depressa* in the collection of Mr. Buitendijk.

I have thought it useful to figure all the species of Souleyet again ¹⁾, with exception of those, of which good drawings, leaving no doubt as to the identification of the species, already exist. Souleyet's figures, though generally remarkably accurate, are, however, too small, and he has overlooked several remarkable features about sculpture, which may supply excellent specific characters.

1) When nothing else is noticed, the figures here given are drawn after Souleyet's types, with the camera.

May this paper contribute something to our knowledge of the group, and facilitate in any way the task of future investigators — a task which I know by experience to be by no means an easy one.

The genera of the Atlantidae.

Two genera are generally admitted, *Oxygyrus* and *Atlanta*, which are distinguished by a whole series of characters. After the study of Souleyet's types I have thought it necessary to add a third genus, *Protatlanta*, the type of which is represented by Souleyet's *Atlanta lamanoni*, which name has been altered by Smith, for reasons of priority in nomenclature, in *Atlanta souleyeti*. This remarkable new genus forms in many respects a transition between *Atlanta* and *Oxygyrus*, but it cannot be classed among either of these genera.

Key to the genera.

1. Shell nautiloid, all whorls in the same plain, horny to a greater or lesser extent, according to age; keel membranous, nearly as broad as the last whorl; operculum triangular; animal with a very bulky proboscis and a large sucker on the fin *Oxygyrus* Benson.

Shell right-handed; apical whorls forming a little spire at one side of the flat shell, an umbilicus existing at the opposite side; operculum rounded, oval, with a spiral portion . . 2

2. Keel of the shell cartilaginous, encircling nearly the whole last whorl (but often wanting as it is most easily to be removed) and extending to the outer lip of the aperture; shell quite ¹⁾ cartilaginous (?); animal very much resembling that of *Oxygyrus*, with a mighty proboscis and a large sucker *Protatlanta* mihi.

1) The specimens of Souleyet, which are very well preserved, show no trace of chalky matter in their shells. On the other hand, Smith (p. 44) has stated, that the shell is „of the same vitreous character” as in *Atlanta*. This question may therefore remain unsettled.

Keel of the shell chalky, as is indeed the whole shell, outer lip of the aperture always more or less fissured; animal with a slender proboscis and a smaller sucker on the fin *Atlanta* Lesueur.

Oxygyrus Benson ¹⁾.

Atlanta (*p. p.*) auctorum.

1835. *Oxygyrus* Benson.

1836. *Helicophlegma* (*p. p.*) d'Orbigny.

1841. *Ladas* Cantraine.

The well-known typical representant of this genus, *O. keraudreni* (Lesueur), has been classed firstly among the species of *Atlanta* (so by Lesueur himself, Rang, Cuvier, Deshayes), till Benson established a new genus for it. The diagnosis, given by this author of the type, his *O. inflatus*, which, moreover, has never been figured, is very incomplete and does not show any specific characters, although beyond doubt to be applied to *Oxygyrus*, and probably to the common *O. keraudreni*. It seems advisable to reject Benson's species.

I have shown in my monograph (pp. 49 and 50), that *Oxygyrus* n. sp. Macdonald is the young stage of a species of Souleyet. Leaving aside some doubtful forms (which I shall have occasion to refer to further on), there remain only two species.

Key to the species.

Shell cartilaginous for the greater part (in adult state), large (5—10 mm.), chalky part of shell without spiral lines; median plate of radula with three spines, of which the middle is the largest one, while the lateral spines are nearly obliterated . . . *Oxygyrus keraudreni* (Lesueur).

Shell with its cartilaginous part (if present) smaller, small

1) As to the literature I may be allowed to refer to my former monograph and especially to E. A. Smith, Challenger-Expedition LXXII, 1888.

(0,5—3 mm.), chalky part, either wholly or on the penultimate whorl, provided with conspicuous undulating spiral lines; median plate of radula with three spines, all of nearly the same length. . . . *Oxygyrus rangi* (Souleyet).

Species 1. *Oxygyrus keraudreni* (Lesueur).

1817. *Atlanta keraudreni* Lesueur.

1835. *Oxygyrus inflatus?* Benson.

1836. *Atlanta (Helicophlegma) keraudreni* d'Orbigny.

1840. „ *bivonae* Pirajno.

1841. *Ladas keraudreni* Cantraine.

1850. *Oxygyrus keraudreni* Gray.

1852. *Atlanta violacea?* Gould.

1852. „ *tessellata?* Gould.

1852. „ *mediterranea?* Costa,
non Quoy et Gaimard (1832), Souleyet (1852)¹⁾,
Ray Lankester (1883) and Pelseneer (1906).

Animals:

Mediterranean,	date?	± 20 sp.,	Cantraine.
Atlantic Ocean,	(0° N., 23° W.), 1879,	1 sp.,	Kruisinga.
„	(1° S., 23° W.), 1879,	4 sp.,	„

Species 2. *Oxygyrus rangi* (Souleyet).

1852. *Atlanta rangi* Souleyet.

1862. *Oxygyrus* n. sp. Macdonald.

1888. *Oxygyrus rangi* Smith.

Animals:

Mediterranean,	date?	3 sp.,	Buitendijk.
Indian Ocean ²⁾ ,	January '06,	1 sp.,	„
„	April '06,	5 sp.,	„

1) Souleyet (Voy. Bonite) and after him Ray Lankester (Enc. brit.) and Pelseneer (Treatise of Zoology, p 161) erroneously refer a figure of *A. peroni* to *O. keraudreni*.

2) It may be stated here, that with the term „Indian Ocean” in this paper always the same route: Perim—Point de Galle—Sabang is meant.

I confess, that I entertain some doubt as to the specific distinctness of these two species. The features by which they are to be recognized, seem to be most conspicuous, but they all (except those of the radula) vanish with increasing age.

As I have pointed out formerly in my monograph (p. 50), and is f. i. stated by Oberwimmer, *O. keraudreni* passes in its youth through a *Bellerophina*-stage, as it is called, and it seems as if *O. rangi* is only an intermediate form between this *Bellerophina* and the full-grown *O. keraudreni*.

The specimens of Mr. Buitendijk were all young specimens in different stages of development and from them I inferred the following notes:

I. Shell of $1\frac{1}{2}$ mm.: Quite chalky, wholly provided with undulating spiral lines. Form much rounded, which becomes yet more conspicuous by the total absence of a keel. Faintly tinted in rose. (*Bellerophina*).

II. Shell of 1 mm.: At the aperture a small amount of cartilaginous matter is deposited; this part of the shell is uncoloured and without sculpture. A very high cartilaginous keel at the aperture, but only over a short distance on the last whorl, and abruptly terminating. (Stage figured by Macdonald, and copied by me, Pl. I, fig. 5).

III. Shell of 2 mm.: The membranous part of the shell occupies the second half of the last whorl, and so does the keel which indeed is intimately connected with it.

IV. Shell of 2,5—3 mm. (of Souleyet): The membranous part of the shell has not extended further, but the first half of the last whorl, though chalky, does not show the spiral lines ¹⁾, which have retired entirely to the penultimate whorl.

All these stages are to be referred to *O. rangi*. In my material of *O. keraudreni* the smallest specimen measures 5 mm. Here the whole last whorl is cartilaginous; the keel, which is very high on the second half of this whorl,

1) Only some transverse lines of growth are to be seen here.

becomes very low and inconspicuous on the first half, though reaching the inner lip, and so embracing the whole circumference of the shell. The separation of the cartilaginous and the chalky part of the shell is not quite clear, but it seems as if the membranous matter gradually covers the chalk and absorbs it. Sculpture is altogether absent.

Though there is a gap in my material between the shells of 3 mm. and of 5 mm., the idea that *O. rangi* represents a young stage of *O. keraudreni* is very suggesting, also, because *O. rangi* has been caught by Mr. Buitendijk in the Mediterranean, which has always been regarded as the typical habitat of *O. keraudreni*.

But a few facts must be born in mind. Firstly, the *Bellerophina*-stage of *O. keraudreni*, as it is figured by Oberwimmer, exhibits spiral lines, but these do not undulate, as is decidedly the case in *O. rangi*. Such simple lines I have not observed in any specimen. And secondly, the radulae are indeed very different. I have pointed to it formerly (monograph, Pl. VII, figs. 3 and 5), and can only confirm, after repeated investigations, that in *O. keraudreni* the median plate carries three spines, the middle one of which is large, while the lateral ones are inconspicuous, whereas in *O. rangi* these spines are of nearly the same length.

To the genus *Oxygyrus*, and probably to *O. keraudreni*, another species, »*Atlanta violacea*'' Gould, from the tropical Atlantic (copied by me, Pl. I, figs. 42 and 43) is likely to be referred; at least the shell is said to be nautiloid, with the last whorl »not rapidly enlarging, and unusually distended''; the keel is very high at the aperture (which, however, is elliptical, not rounded); and finally, the side-view, showing an umbilicus at both sides of the shell, the violaceous colour, especially on the spire, and the diameter (9,5 mm.) strongly suggest the idea that the species must be classed in *Oxygyrus*.

The same is true perhaps for another species of the same author, »*Atlanta tessellata*'' , also from the tropical

Atlantic, at least on account of the nautiloid shell, and the keel extending to the outer lip of the aperture. Unfortunately only a surface view of the shell is given (copied by me, Pl. I, fig. 44). I think the remarkable row of »square, violaceous spots, following around the middle of the spire” may be due to some accidental disposition of the organs of the animal itself, and not inherent to the shell. The diameter (nearly 6,5 mm.) also affords some argument to the affinity to *Oxygyrus*, as this diameter among the species of *Atlanta* is only attained by *A. peroni*, from which »*A. tessellata*” must be certainly separated. Some more certainty, however, cannot be obtained until renewed investigation of the type-specimen.

Finally »*Atlanta mediterranea*” Costa, from the Mediterranean, (copied by me, Pl. I, fig. 41), which is most imperfectly known, and which I had formerly (p. 10), though hesitatingly, referred to *Atlanta lesueuri*, belongs perhaps also in the genus *Oxygyrus*.

Protatlanta mihi.

1852. *Atlanta* (p. p.) Souleyet.

1862. *Oxygyrus* (p. p.) Macdonald.

Shell cartilaginous (see note p. 3), spire short, conical, projecting on one side, whorls much rounded in transverse section; keel horny, very high, commencing most conspicuously at the outer lip of the aperture, as in *Oxygyrus*, and here, as in this last-named genus, consisting of two plates, which leave a small space between them, in which the mantle of the animal projects.

Animal almost entirely as in *Oxygyrus*, with a very bulky proboscis and short tentacles; sucker at the fin very large.

Operculum as in *Atlanta*, with a small spiral portion.

The type of this new genus is »*Atlanta lamanoni*” of Souleyet, which name has been altered by E. A. Smith in »*Atlanta souleyeti*”, as the term, used by Souleyet, had

been already applied, long before, by Costa to another species. The study of Souleyet's specimens has shown me, that they exhibit a series of remarkable features which justify the establishing of a new genus, as a transition between *Oxygyrus* and *Atlanta*.

Species 1. *Protatlanta souleyeti* (Smith).

1852. *Atlanta lamanoni* Souleyet, non Eschscholtz.

1888. *Atlanta souleyeti* Smith.

(Plates 1 and 2, figs. 1—6).

Shell with nearly four whorls, spire rather large, last whorl much enlarging, though not in the proportion as in *Atlanta*; spire projecting, distinctly visible in side view; at the umbilicus the last half of the penultimate whorl is to be seen, provided with \pm 10 thin spiral lines, gradually disappearing on the last whorl (fig. 3).

The cartilaginous keel is very often wanting, as it is easily to be detached from the last whorl, which it embraces almost entirely, but terminates abruptly on the first part.

The animal resembles *Oxygyrus* in many respects (fig. 4). Proboscis very large and often swollen at the anterior part, buccal mass voluminous; tentacles short, situated at the lateral side of the eyes, which have a very broad base, and agree with those of *Oxygyrus*.

Sucker well developed, distinctly separated from the fin by means of a very short stalk; yet the proportion between sucker and fin is more like that of *Atlanta*, and so in favour of the last-named organ.

Radula (fig. 6) strong, as in all Atlantidae. Median plate with three spines, lateral ones directed outwards, and smaller than the median spine. Intermediate tooth with a large median crest, which extends nearly to the tip, resembling somewhat that of *Pterotrachea*. Lateral teeth both of the same length, slightly curved.

Operculum (fig. 5) like that of *Atlanta*, very thin, transparent, cartilaginous. Spiral portion (to which the

musculous part of the tail is inserted) with a short spiral line and a few concentric ones; distal half provided with some parallel striae.

As may be inferred from the foregoing description, *Protatlanta* with the only species *P. souleyeti* (Smith), forms in many respects a remarkable transition between *Oxygyrus* and *Atlanta*. To repeat it shortly: the cartilaginous consistence of the shell and the keel, the form of the last, the proboscis and the tentacles, are like that of *Oxygyrus*; the projecting spire, the proportion between sucker and fin, and the spiral operculum, are all features, which resemble *Atlanta*.

Diameter of the shell 2 mm. or less.

The species seems to live only in the Atlantic, from which it is recorded both by Souleyet and Smith (Challenger-Expedition).

As I had only five type-specimens of Souleyet at my disposal, I have not ventured to search for the mucous glands of the mouth, which occur in *Atlanta* (recorded by me recently, p. 51, Pl. VII, fig. 8).

Atlanta Lesueur.

1817. *Atlanta* Lesueur.

1825. *Steira* Eschscholtz.

1868. *Atalanta* Knocker.

Shell and keel chalky, not flexible as in the foregoing genera, outer lip of the aperture fissured. Animal with a slender proboscis and long tentacles. Operculum with a spiral portion.

For further particulars I may refer to the diagnosis I have given in my monograph (pp. 50 and 51); I shall only add, that the keel is made up of two plates (as in *Carinaria*), leaving, at least on the last whorl, a small space between them. This keel becomes gradually lower towards the aperture, and disappears entirely at the fissure in the outer lip.

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It is especially in *Atlanta* that the disproportion of the whorls is most clearly pronounced. We may distinguish safely between the spire (all the whorls but the last one) and the last whorl, which is always rolled up, in its whole extent, in the same plain, whereas the spire is more or less elevated, but nearly always very small, and consisting of generally 4—5 whorls, which follow each other regularly and gradually increasing.

By far the most species of the Atlantidae belong to this genus. Formerly, in my monograph (p. 6), I published a list containing 27 names; one of them, however, being identical with »*Atlanta souleyeti*” Smith, while three other terms (see above) are likely to be referred to *Oxygyrus*, the number should be reduced to 23, which, with addition of two species added by me (pp. 53, 55, Pl. VII, figs. 9 and 10, Pl. VIII, figs. 14—18), makes a total number of 25 names¹). I shall not repeat this list here, but shall only try to discriminate certain groups.

Firstly we may separate a few species, which are most insufficiently described, sometimes even never figured, and which, in my opinion, should be rejected entirely. They are:

- A. lamanoni* (Eschscholtz).
- „ *helicalis* Sowerby.
- „ *sp. 1* Gray (most likely = *Oxygyrus keraudreni* Lesueur).
- „ *sp. 2* Gray (most likely = *A. peroni* Lesueur).
- „ *planorboides* Forbes.

Secondly three names are synonyms of other forms, already known:

- A. rosea* Souleyet = *A. peroni* Lesueur.
- „ *inclinata* Vayssière (his fig. 91) = *A. fusca* Souleyet.
- „ *oligogyra* Tesch = *A. lesueuri* Souleyet.

Further I regard a few species as uncertain; in some cases the type-specimens have been lost, and I have not

1) Strictly spoken there are 26 names, as Vayssière under the title »*A. inclinata*” comprises two certainly distinct species.

succeeded in obtaining absolute certainty about them, though believing they may be recognized in the future. They are:

- A. involuta* Souleyet (= *A. turriculata*? Souleyet), type lost.
 „ *quoyana* Souleyet (= *A. inflata*? Souleyet), type lost.
 „ *quoyana* Vayssière (= *A. helicinoides*? Souleyet).
 „ *inclinata* „ (his fig. 90) (= *A. inflata*? Souleyet).
 „ *primitia* Gould }
 „ *cunicula* „ } (= *A. lesueuri*? Souleyet).

So there remain only 12 names, which, in my opinion, refer certainly to distinct species:

- A. peroni* Lesueur.
 „ *steindachneri* Oberwimmer.
 „ *affinis* Tesch.
 „ *gaudichaudi* Souleyet.
 „ *lesueuri* „
 „ *inflata* „
 „ *helicinoides* „
 „ *depressa* „
 „ *fusca* „
 „ *turriculata* d'Orbigny.
 „ *inclinata* Souleyet.
 „ *gibbosa* „

These species may be arranged in different groups, as I shall try to show. Not ascribing to these groups the value of subgenera, I shall call them simply after one species which may serve as the type of the group. It appeared impossible to me to comprise in short diagnoses the very slight differences among the species, and so I thought it sufficient, for the sake of provisional orientation, to give the following key.

Key to the groups.

1. Shell very flat, whorls all in nearly the same plain, spire scarcely or even not at all projecting beyond the last whorl, outer lip generally deeply fissured; keel (in adult specimens) often penetrating between the whorls, so that even the whole penultimate whorl may become encircled

by the keel; shell usually colourless, without spiral lines, sometimes attaining a size of nearly 10 mm.

Atlanta peroni-group.

Shell with a short conical spire, always projecting beyond the last whorl; keel generally not reaching the inner lip of the aperture; sculpture often present in the form of spiral lines on the apical whorls; shell small, with a maximum size of 3—4 mm., usually smaller. . . . 2

2. Spire straight (as regards the plain in which the last whorl is rolled up) or very faintly reflexed backwards, conical, with rather obtuse apex, generally coloured with brown or yellow tints, which vanish almost entirely on the last whorl *Atlanta inflata*-group.

Spire reflexed, either backwards or forwards, in various ways of distinction. 3

3. Shell horny-coloured, spire always darker, slender; keel extending nearly to the outer lip, fissure therefore scarcely developed *Atlanta turriculata*-group.

Shell colourless; spire very distinctly reflexed, outer lip deeply fissured *Atlanta inclinata*-group.

Group of *Atlanta peroni*.

Five species are to be distinguished here:

1. *A. peroni* Lesueur.
2. „ *steindachneri* Oberwimmer.
3. „ *affinis* Tesch.
4. „ *gaudichaudi* Souleyet.
5. „ *lesueuri* „

They are all characterized by their flat shells, which are nearly planorboid. The first three are (in adult state at least) remarkable by the keel, which separates the last whorl from the penultimate one, penetrating more or less between the whorls. In *A. gaudichaudi* and *A. lesueuri* the spire is extremely small, in comparison with the last whorl. For reasons mentioned above, I shall not try to give a key to the species of this group, which are recognizable

only to an experienced eye. It will be more advisable to refer to the figures.

Species 1. *Atlanta peroni* Lesueur.

1817. *Atlanta peroni* Lesueur.
 1832. „ *keraudreni* Quoy et Gaimard.
 1840. „ *costae* Pirajno.
 1852. „ *keraudreni* Souleyet.
 1852. „ *rosea* Souleyet, non Tesch (1906).
 1883. *Oxygyrus keraudreni* Ray Lankester (copied by Pelseneer in Treatise of Zoology, Mollusca, fig. 141, p. 161, 1906).

(Plates 1 and 2, figs. 7—9).

Dry shells:

Atlantic Ocean, purchased 1907, 15 sp., Sowerby and Fulton.

Animals:

Red Sea,	March 16, '07,	2 sp.,	Buitendijk.
Gulf of Aden,	August '06,	1 sp.,	„
Indian Ocean,	April '06,	1 sp.,	„

As is well known, the keel penetrates to a great extent between the whorls, but this character is only pronounced in adult specimens. The young shells, of which the material collected by Mr. Buitendijk consists, belong to the form *rosea*, which has been regarded by Souleyet as a distinct species. I have carefully examined shells of all ages, and after becoming convinced that the spires of *A. rosea* and *A. peroni* are absolutely identical (as is also the case with the characteristic radula), I may be allowed to give the following series:

I. Shells of 0,5—2 mm. (figs. 7—9). *Rosea*-form. Keel not reaching inner lip of aperture, faintly tinted in brown at the base; spire somewhat projecting (fig. 8); at the underside of the shell more than two whorls are visible (fig. 9).

II. Shells of 3—4 mm. Like the foregoing, but keel extending somewhat further and reaching the inner lip, sometimes even penetrating between this lip and penultimate whorl.

III. Shells of 5—10 mm. With advancing age the keel penetrates further between the whorls and the whole penultimate whorl may be (in the largest specimens) embraced by the keel (figured by Vayssière, Pl. VI, fig. 86), but inner lip always in close contact with it; at the under side of the shells three whorls may be seen. This stage is the typical *peroni*-form.

As has been said above, the spires of *A. rosea* and *A. peroni* are wholly identical. Another proof that *A. rosea* is nothing but the young stage of *A. peroni* is afforded by the radulae. Vayssière (p. 50, Pl. VI, figs. 88 and 89) described and figured the radula of *A. peroni* and I can affirm his assertions after repeated investigation. With this radula the same organ in *A. rosea* agrees entirely. The intermediate plate exhibits at its lateral side a very distinct tooth, together with the usual point of this plate, but much smaller; the lateral teeth are much shorter.

The shell is wholly colourless, with exception of a faint brown colour at the base of the keel, which occasionally occurs. Neither is any sculpture to be seen, only a few striae of growth. A good description is given by Vayssière (pp. 50 and 51).

The specimens of the Siboga-Expedition, which I have formerly referred to »*A. rosea*'' (p. 57, Pl. VIII, figs. 22—24) really do not belong to this species, but to *A. depressa* Souleyet (see p. 21). With the information I am fortunate enough to have acquired after examination of Souleyet's types, I readily apologize for my error.

Species 2. *Atlanta steindachneri* Oberwimmer.

1898. *Atlanta steindachneri* Oberwimmer.

For description and figures I refer to Oberwimmer (copied by me in my monograph, p. 12, Pl. II, figs. 50 and 51).

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This species is to be distinguished by the inner lip and the adjacent part of the last whorl not being in close contact with the keel, thus showing a tendency to detorsion, as this is pronounced much more clearly in *Carinaria*. One may suppose this to be a character dependent on age, but this idea is contrary to the fact that *A. steindachneri* reaches a size of only 3—4 mm., whereas even the largest specimens of *A. peroni* (10 mm.) never show a similar loosening of the whorls. In all other respects (the radula of *A. steindachneri* is not known) the two species are closely connected.

Species 3. *Atlanta affinis* Tesch.

1906. *Atlanta affinis* Tesch.

For description and figures I refer to my monograph (p. 53, Pl. VIII, figs. 9 and 10), where I have tried to give a sufficient diagnosis of this species, which, like the foregoing, is very closely connected with *A. peroni*. Besides some characteristic features of the shell, I may draw attention to the fact that the intermediate plate of the radula does not show a small tooth at its concave, lateral side, and that the lateral teeth are comparatively longer than in *A. peroni*.

Species 4. *Atlanta gaudichaudi* Souleyet.

1852. *Atlanta gaudichaudi* Souleyet.

(Plates 1 and 2, fig. 10).

Dry shells:

N. Atlantic Ocean, purchased 1907, 2 sp., Sowerby and Fulton.

Animals:

Red Sea,	May	'06,	1 sp.,	Buitendijk.
Indian Ocean,	April	'06,	2 sp.,	"
"	September	'06,	1 sp.,	"
"	November	'06,	1 sp.,	"

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Poeloe Weh,	March 25,	'07,	2 sp.,	Buitendijk.
Malacca-street,	January	'06,	4 sp.,	"
Java-Sea,	May	'06,	2 sp.,	"
"	December	'06,	2 sp.,	"

For description and figures I refer to my monograph (p. 54, Pl. VII, figs. 11—13); I have only given here a drawing of the shell seen from above. The features, distinguishing this species from *A. peroni* and allied forms, are supplied by the keel, not (or scarcely) penetrating between the inner lip and the penultimate whorl, by the smaller spire (the shell nearly wholly consisting of the last whorl), the suture being always tinted with a reddish-brown colour, which becomes most clear at the base of the keel, and finally by the radula (very powerful in this species, as I counted more than 100 transverse rows), in which the intermediate plate is not provided with a small tooth at the lateral side. Shell colourless (with exception of the suture), without sculpture, only with a few indistinct lines of growth.

Species 5. *Atlanta lesueuri* Souleyet.

1852. *Atlanta lesueuri* Souleyet.

1852. *Atlanta primitia?* Gould.

1852. *Atlanta cunicula* Gould.

1906. *Atlanta oligogyra* Tesch.

(Plates 1 and 2, figs. 11 and 12).

Dry shells:

W. Pacific Ocean, purchased 1907, 16 sp., Sowerby and Fulton.

Animals:

Red Sea,	September	'04,	1 sp.,	Buitendijk.
"	April	'06,	1 sp.,	"
"	May	'06,	1 sp.,	"
"	November	'06,	1 sp.,	"
Gulf of Aden,	December	'05,	14 sp.,	"

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Indian Ocean,	February	'04,	1 sp.,	Buitendijk.
"	January	'06,	15 sp.,	"
"	April	'06,	12 sp.,	"
"	March	'07,	3 sp.,	"
Poeloe Weh,	March 25,	'07,	1 sp.,	"
Java-Sea,	May	'06,	2 sp.,	"

This species is chiefly characterized by the great predominance of the last whorl, in comparison to which the spire, with only 2 or 3 whorls, is extremely small; this proportion is more pronounced here than in any other species. Outer lip deeply fissured, keel very high, separating for some distance the inner lip from the penultimate whorl. By Souleyet and Vayssière transverse ribs, slightly undulating, are particularly noticed, especially on the last whorl. I have seen this sculpture only in empty shells of apparently full-grown specimens (3—4 mm.), in other cases nothing but faint lines of growth could be detected. According to Souleyet, the fissure in the outer lip, and so also the height of the keel near it, are liable to variations; specimens, in which this fissure is very deep, were regarded by the latter author as a variety. Among the few type-specimens of Souleyet I have seen, none of them, however, exhibited a high keel and a shallow fissure, near the outer lip. One of these specimens is figured here (figs. 11 and 12).

Comparing this drawing with those, formerly given by me of *A. oligogyra* (Pl. VIII, figs. 14 and 15, 17 and 18), it is evident that they refer exactly to the same species. Little desirous as I am to increase the number of species, I am fairly satisfied to state this fact, adding, that I have alluded in my monograph (p. 55) to the close affinity of the two species. At that time, however, I had no opportunity of studying an authentic *A. lesueuri*.

I suppose *A. primitia* and *A. cunicula*, both described by Gould, may be the same as *A. lesueuri*, as I moreover suggested already in my monograph (p. 11) for the first species. Here too the spire is extremely small, and is said to be violaceous in *A. primitia*. This colour is also stated

by Souleyet, and I myself found a faint violet-blue colour in some of Mr. Buitendijk's specimens.

A remarkable character of this species is also worth to be mentioned. The animal in spirit-preservation, is always, without exception, of a greyish-white colour, whereas all the other species of the *A. peroni*-group, in the same condition, exhibit a faint yellow tint. This difference in colour enables to distinguish *A. lesueuri* at first sight.

Group of *Atlanta inflata*.

To this group I have referred three species :

6. *A. inflata* Souleyet.

7. „ *depressa* „

8. „ *helicinoides* „

These species have a short conical spire with obtuse apex, projecting beyond the last whorl, and generally coloured; this tint, however, is not peculiar to the shell itself, but to the gonad of the animal, which occupies the hindmost part of the visceral mass, so being enclosed within the apical whorls. The keel does not penetrate between inner lip and penultimate whorl.

Species 6. *Atlanta inflata* Souleyet.

1852. *Atlanta inflata* Souleyet.

1852. *Atlanta quoyana?* Souleyet, *non* Vayssière.

1904. *Atlanta inclinata* Vayssière (his fig. 90), *non* Souleyet.

(Plates 3 and 4, figs. 13—17).

Dry shells :

Atlantic Ocean, purchased 1907, 1 sp., Sowerby and Fulton.

Indian Ocean, „ „ 6 sp., „

Animals :

Mediterranean,	date?,	6 sp.,	Buitendijk.
Indian Ocean,	February '04,	1 sp.,	„
„	January '06,	5 sp.,	„
„	April '06,	2 sp.,	„

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Indian Ocean,	August	'06,	1 sp.,	Buitendijk.
"	November	'06,	1 sp.,	"
Gulf of Aden,	December	'05,	1 sp.,	"
Gulf of Bengal,	August	'06,	1 sp.,	"

I have nothing to add to my former description (monograph, pp. 56 and 57, Pl. VIII, figs. 19—21). Spire consisting of 5—7 whorls, the first 3—5 slowly and regularly increasing, penultimate and especially last whorl rapidly enlarging. In order to show the peculiar sculpture of this species and some other characters, I have figured two shells (figs. 13—16). In fig. 13 some (5—6) distinct spiral lines are visible on the first half of the penultimate whorl; I believe this sculpture to be dependent on age, however, as it is gradually disappearing in larger shells of somewhat more than 2 mm. Fissure in outer lip very wide, but shallow. Two whorls visible at under side of the shell. Colour absent on the last whorl, spire faintly brownish, and this colour is particularly pronounced on the suture. The same tint occurs sometimes at the inner lip. Aperture very large.

A. quoyana of Souleyet was not represented in the material from the Paris Museum. I venture to suggest that it may be the same as *A. inflata*. In the material procured by Mr. Buitendijk I found some specimens (figs. 15 and 16), which agree rather well with Souleyet's figures of *A. quoyana* (copied in my monograph, Pl. I, figs. 38 and 39), though these are much too small. Seen from above, the shells of the typical *A. inflata* with its characteristic spire (fig. 13) and that of »*A. quoyana*» (fig. 15) of Mr. Buitendijk agree entirely (except as regards the sculpture, which is absent in the latter), and so do the side-views (figs. 14 and 16); the operculum is also wholly the same (»*A. quoyana*», fig. 17) and shows a double spiral line, but no trace of parallel lines¹⁾.

1) It may be possible that this negative character is dependent on age, and that the lines make their appearance in quite full-grown shells.

The shell, described by Vayssière under the name of *A. quoyana* (copied in my monograph, Pl. I, fig. 40) is certainly not this species, but must be referred to *A. helicinoides* as I shall attempt to show further on (p. 23).

On the other hand the latter author has designated (p. 55, Pl. VI, fig. 90) under the name of »*A. inclinata*» a specimen, which in my opinion is an *A. inflata*. The shell, seen from apex, agrees exactly with my figure of the type, with the only exceptions, that no spiral sculpture is mentioned, and that the keel penetrates between the penultimate whorl and the inner lip. These two features may be, however, safely supposed to be dependent on age (the specimen of Vayssière measured 2,6 mm.); I have noted previously that the sculpture becomes less distinct in larger shells.

Another specimen of Vayssière, called also »*A. inclinata*», really belongs to *A. fusca* (see p. 26).

Species 7. *Atlanta depressa* Souleyet.

1852. *Atlanta depressa* Souleyet.

1906. *Atlanta rosea* Tesch, non Souleyet.

(Plates 3 and 4, figs. 18—22).

Animals:

Indian Ocean,	January	'06,	2 sp.,	Buitendijk.
„	April	'06,	1 sp.,	„
Gulf of Aden,	December	'05,	1 sp.,	„

The types I have studied, had unfortunately their shells quite dissolved. Among the spoils of Mr. Buitendijk, however, I had the good fortune to find some specimens, surely to be referred to *A. depressa*, the typical spire of which (comparatively larger than in *A. inflata*, compare figs. 13 and 18) could be detected even in the damaged type-specimens of Souleyet. This species may be very easily confounded with *A. inflata*, to which it is most nearly related, but it is distinguished: 1°. by the comparatively larger spire,

2°. by the deeper fissure in the outer lip, 3°. by the umbilicus, the three last whorls (in *A. inflata* only two) being visible at the under side of the shell (fig. 20), and 4°. by the absence of colour on the spire. Besides, the spiral sculpture is so slightly pronounced, that even in young shells and with great magnificent power, scarcely any trace of it is to be found. The side views of *A. inflata* (fig. 14) and of *A. depressa* (fig. 19) differ also in the fact, that in the first species the aperture is much larger, and that the spire is a regular, short cone, whereas in *A. depressa* it is somewhat irregular, the first two whorls forming a higher, more elevated cup.

I have figured also a specimen (figs. 21 and 22), which I regard, though hesitatingly, as *A. depressa*. The shell, seen from apex, with its few whorls, resembles *A. lesueuri*¹⁾, especially on account of numerous curved lines of growth, occurring on the last whorl (fig. 21); the side view on the other hand (fig. 22) is most like that of *A. depressa*. Near the aperture the shell was seriously damaged.

I greatly regret to confess that I have been mistaken in my monograph, in designating the true *A. depressa* of the Siboga-Expedition to *A. rosea* (p. 57, Pl. VIII, figs. 22 and 23). In the collection of the British Museum I had at that time the opportunity to examine, *A. depressa* was not represented, and this may account (and in some way apologize) for my mistake. Comparing the here given figures with those formerly published, the identicalness will be evident.

Species 8. *Atlanta helicinoides* Souleyet.

1852. *Atlanta helicinoides* Souleyet.

1904. *Atlanta quoyana* Vayssière, non Souleyet.

(Plates 3 and 4, figs. 23 and 24).

Animals:

Red Sea, January '06, 1 sp., Buitendijk.

1) Here, however, the spire is much smaller in proportion to the last whorl

Indian Ocean,	February	'04,	1 sp.,	Buitendijk.
"	January	'06,	2 sp.,	"
"	April	'06,	4 sp.,	"
"	November	'06,	1 sp.,	"
"	March	'07,	1 sp.,	"
Gulf of Aden,	December	'05,	1 sp.,	"
"	March 17,	'07,	1 sp.,	"
Java-Sea,	May	'06,	1 sp.,	"

This species is very closely allied to *A. inflata*; the whorls, however, are not only fewer in number (5), but the whole spire is much larger (fig. 23), the coils regularly increasing in size, and provided, nearly throughout, with a very distinct spiral sculpture, consisting of 3—4 lines on each whorl; this sculpture exists also at the under side of the shell, on the penultimate whorl, where it is wholly absent in *A. inflata* and *A. depressa*. It may be here once more a feature, disappearing in advancing age, but even then the proportion of spire and last whorl affords a specific distinctness. On side view (fig. 24) the spire has a conical form, somewhat larger and higher than in *A. inflata*. Aperture rather small. Shell colourless, base of the keel diffusely reddish-brown, spire somewhat darker, greyish, owing to the gonad of the animal, in which often, in very regular distances around the suture, dark pigmented spots are to be seen.

I have scarcely any doubt, the shell, figured by Vayssière under the name of »*A. quoyana*», will belong to the species under discussion (copied in my monograph, Pl. I, fig. 40); though nothing is mentioned about the spiral sculpture, the surface view of the shell is exactly the same. The keel extends to the outer lip, but Vayssière himself states, the aperture of his specimen was damaged.

Group of *Atlanta turriculata*.

This group comprises two species:

9. *Atlanta turriculatā* d'Orbigny.
10. *Atlanta fusca* Souleyet.

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Shell always coloured, yellowish or brownish, especially on the spire; whorls much rounded in transverse section; keel extending to outer lip.

Species 9. *Atlanta turriculata* d'Orbigny.

1836. *Atlanta turriculata* d'Orbigny.

1852. *Atlanta involuta?* Souleyet.

(Plates 3 and 4, figs. 25 and 26).

Animals:

Indian Ocean,	January	'06,	4 sp.,	Buitendijk.
"	April	'06,	5 sp.,	"
"	September	'06,	1 sp.,	"
"	November	'06,	1 sp.,	"
Gulf of Bengal,	August	'06,	1 sp.,	"

Spire small, forming an elevated, slender cone (fig. 26), last whorl very large (fig. 25), much swollen; aperture rounded, with a small slit in the outer lip. Shell (5—6 whorls) always of a dark yellowish or brownish hue, especially on the spire. No sculpture (except striae of growth) in adult specimens (1,5—2 mm.), but in young ones the shell is adorned throughout by a few very distinct spiral lines; moreover, in these young specimens the spire (though consisting of the same characteristic coils, rapidly descending like those of *Turritella*) projects considerably beyond the last whorl, which is much smaller than in full-grown shells; the whole shell is transparent, only faintly tinted with rose.

As I have pointed out in my monograph (p. 58), the spire is very slightly reflexed backwards; in young shells of about 0,5 mm. (as above described) it is straight.

A. involuta Souleyet was not represented in the collection of the Paris Museum. The side view of this species (copied in my monograph, Pl. I, fig. 18) is very much like that of *A. turriculata* (only there seem to be more whorls in the spire, though Souleyet did not mention more than 6.

Species 10. *Atlanta fusca* Souleyet.1850. *Atlanta brunnea* ¹⁾ Gray.1852. *Atlanta fusca* Souleyet.1904. *Atlanta inclinata* Vayssière (his fig. 91), *non* Souleyet.

(Plates 3 and 4, figs: 27—29).

Dry shells:

Indian Ocean, purchased 1907, 5 sp., Sowerby and Fulton.

Animals:

Red Sea,	April	'06,	1 sp.,	Buitendijk.
Indian Ocean,	September	'06,	1 sp.,	"
"	July	'07,	1 sp.,	"

At first sight this species may be confounded with *A. inflata* or *A. helicinoides*. It is, however, distinguished by a whole series of characters: 1°. by the spire forming a short cone with a more pointed apex (fig. 28), 2°. by the very broad keel, extending to inner and outer lip, and so encircling the whole shell, 3°. by the dark horn-colour, also on the keel, about the same as in the foregoing species, especially on the spire, and 4°. by a very characteristic sculpture: 2—3 spiral lines on the apical whorls, which number increases to 12—14 on the second half of the penultimate whorl (fig. 27), where these lines are slightly undulated (fig. 28). Around the umbilicus 5—7 spiral lines, likewise undulating, are distinctly visible. In no other species of *Atlanta* the spiral sculpture is so strongly accentuated, it occurs even in the largest shells of 2—2,5 mm., and may persist throughout the whole life of the animal. Transverse striae of growth are also very distinct on the last whorl, and here another remarkable feature may be mentioned: numerous rows of tiny points, parallel

1) This name has been given by Gray, translating „Atlante brune”, under which title the species is designated by Souleyet in the Atlas of the „Voyage de la Bonite”, which appeared already in 1842.

to each other, and crossing the lines of growth, not to be confounded with the undulating spiral sculpture at the beginning of the last whorl. In fig. 27 they are not figured.

A specimen, figured ¹⁾ by Vayssière under the name of »*A. inclinata*» (fig. 91), most likely belongs to *A. fusca*, chiefly on account of the »nombreuses lignes longitudinales parallèles, constituées par une multitude de petites ponctuations.» No mention is made, however, of the much coarser sculpture on the spire, which would certainly have been observed, if present.

Group of *Atlanta inclinata*.

It contains two species:

11. *Atlanta inclinata* Souleyet.

12. *Atlanta gibbosa* Souleyet.

These species are certainly not nearly related, and I have enclosed them in one group only for the sake of convenience, as, though mutually very clearly distinct, they are separated off from the other species by their large, conical spire, which is always reflexed on the last whorl, either forward or backward.

Species 11. *Atlanta inclinata* Souleyet.

1852. *Atlanta inclinata* Souleyet, non Vayssière.

(Plate 5, figs. 30—32).

Animals:

Red Sea,	January	'06,	1 sp.,	Buitendijk.
»	April	'06,	1 sp.,	»
Indian Ocean,	April	'06,	1 sp.,	»

This beautiful species is easily recognisable by the following characters: 1°. the large spire forms a short

1) Another specimen (fig. 90) under the same title is probably *A. inflata* (see p. 21).

cone, which is very conspicuously reflexed on the last whorl (figs. 30 and 31), 2°. the keel extends for some distance on the penultimate whorl, and 3°. the whole shell is colourless and quite transparent, with exception of an occasional diffuse brownish hue at the inner lip. Aperture rounded (fig. 31), outer lip deeply fissured.

In one of the type-specimens of Souleyet, which I have figured here, a remarkable sculpture is visible on the spire (fig. 30), consisting of numerous transverse striae, radiating from the apex, mostly on the 2nd, 3rd and 4th whorl. In other specimens I have not observed this feature. The same shell also exhibits (fig. 32) around the umbilicus, and likewise radiating from it, a number of very fine grooves, slightly undulating in their course; here the penultimate whorl (as in all the specimens I have seen) is not rounded, but forms an obtuse angle in transverse section (fig. 32). On the last whorl transverse lines of growth are very distinct.

Species 12. *Atlanta gibbosa* Souleyet.

1852. *Atlanta gibbosa* Souleyet.

1859. *Atlanta gibba* Chenu.

(Plate 5, figs. 33 and 34).

Dry shells :

Indian Ocean, purchased 1907, 2 sp., Sowerby and Fulton.

Animals :

Red Sea,	April	'06,	1 sp.,	Buitendijk.
Indian Ocean,	January	'06,	1 sp.,	"
"	April	'06,	1 sp.,	"
Gulf of Aden,	August	'06,	1 sp.,	"

Spire very large, more than in any other species (fig. 33), reflexed forward; last whorl comparatively small (fig. 34); outer lip deeply fissured. A single spiral line, following the suture (fig. 34). Shell colourless, entirely transparent.

This small species resembles very much a young stage of

some *Atlanta*, as the large, elevated, conical spire, which gives to the shell a rather regular (and so in *Atlanta* very uncommon) appearance, is much like that of larval forms. Formerly (monograph, p. 60) I have pointed out why I regard *A. gibbosa* certainly as a distinct species.

The following is a list of the species of the Atlantidae in the Leyden Museum:

- Oxygyrus keraudreni* (Lesueur).
 „ *rangi* (Souleyet).
Atlanta peroni Lesueur.
 „ *gaudichaudi* Souleyet.
 „ *lesueuri* „
 „ *inflata* „
 „ *depressa* „
 „ *helicinoides* „
 „ *turriculata* d'Orbigny.
 „ *fusca* Souleyet.
 „ *inclinata* „
 „ *gibbosa* „

So the Museum possesses 12 of the 15 species I have accepted in this paper. Absent are *Protatlanta souleyeti* (Smith), *Atlanta steindachneri* Oberwimmer and *Atlanta affinis* Tesch.

Horizontal Distribution.

With the information now available it seems possible to add a few notes about the horizontal distribution of the Atlantidae. It seemed advisable to me to reject such notes, distributed in literature, which are not sufficiently verified, and for that reason I feel justified in mentioning only the following authors:

Souleyet (»Bonite’’).

Smith (»Challenger’’).

Oberwimmer (»Pola’’).

Vayssière (»Hirondelle’’ and »Princesse Alice’’).

Tesch (»Siboga’’ and collection Leyden Museum).

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Name of the species	Atlantic	Mediterranean	Red Sea with Gulf of Aden	Indian Ocean	Malay Archipelago	Pacific
<i>Oxygyrus keraudreni</i> (Les.)	×	×	—	×	—	—
„ <i>rangi</i> (Soul.)	—	×	—	×	×	×
<i>Protatlanta souleyeti</i> (Sm.)	×	—	—	—	—	—
<i>Atlanta peroni</i> (Les.)	×	×	×	×	×	×
„ <i>steindachneri</i> Ob.	—	×	—	—	—	—
„ <i>affinis</i> Tesch	—	—	—	—	×	—
„ <i>gaudichaudi</i> Soul.	—	—	×	×	×	×
„ <i>lesueuri</i> Soul.	×	×	×	×	×	×
„ <i>inflata</i> Soul.	×	×	×	×	×	×
„ <i>depressa</i> Soul.	—	—	×	×	×	×
„ <i>helicinooides</i> Soul.	×	—	×	×	×	×
„ <i>turriculata</i> d'Orb.	—	—	—	×	×	×
„ <i>fusca</i> Soul.	×	— ¹⁾	×	×	×	×
„ <i>inclinata</i> Soul.	×	—	×	×	×	×
„ <i>gibbosa</i> Soul.	×	—	×	×	×	—

In the future most species, if not all, will prove to be cosmopolitical, I think. The Atlantidae, as all other Heteropoda, are inhabitants of tropical and subtropical regions, and never any species has been recorded from boreal or notal waters, and indeed will die very soon, if occasionally carried away by currents into high latitudes.

EXPLANATION OF FIGURES.

Fig. 1	} <i>Protatlanta souleyeti</i> (Smith)	Shell from apex.
„ 2		„ from aperture.
„ 3		„ from umbilicus.
„ 4	} <i>Atlanta peroni</i> Lesueur (<i>rosea</i> -form)	Animal, removed from shell, from the right.
„ 5		Operculum, view from inside.
„ 6	} <i>Atlanta gaudichaudi</i> Souleyet.	Transverse row of radula.
„ 7		Shell from apex.
„ 8		„ from aperture.
„ 9	} <i>Atlanta lesueuri</i> Souleyet	„ from umbilicus.
„ 10		„ from apex.
„ 11		„ from aperture.
„ 12		„ from aperture.

1) Recorded by Oberwimmer, but without figure.

Fig. 13	} <i>Atlanta inflata</i> Souleyet	}	Shell from apex.
" 14			" from aperture.
" 15			" from apex (<i>quoyana?</i> see text).
" 16			" from aperture (<i>quoyana?</i> see text).
" 17			Operculum, inside view (<i>quoyana?</i> see text).
" 18	} <i>Atlanta depressa</i> Souleyet	}	Shell from apex.
" 19			" from aperture.
" 20			" from umbilicus.
" 21			" from apex (see text).
" 22			" from aperture (see text).
" 23	} <i>Atlanta helicinoides</i> Souleyet	}	" from apex.
" 24			" from aperture.
" 25	} <i>Atlanta turriculata</i> d'Orbigny	}	" from apex.
" 26			" from aperture.
" 27	} <i>Atlanta fusca</i> Souleyet	}	" from apex.
" 28			" from aperture.
" 29			" from umbilicus.
" 30	} <i>Atlanta inclinata</i> Souleyet	}	" from apex.
" 31			" from aperture.
" 32			" from umbilicus.
" 33	} <i>Atlanta gibbosa</i> Souleyet	}	" from apex.
" 34			" from aperture.

Leyden Museum, January 1908.

NOTE II.

TWO NEW COSMEMA-SPECIES

(Cicindelidae: Coleoptera)

OF THE AUROPUNCTATA-GROUP, FROM ANGOLA

BY

Dr. WALTHER HORN.

I got some specimens of *Cosmema auropunctata* Qued. from my friend Dr. Cr. Wellman, who captured them in Angola (Chiyaka district: XI, 1907). The material enables me to give some additional notes to the author's description. The »rib« of the elytra is a narrow smooth stripe, just a little elevated in the middle of its breadth. The margin of the elytra, outwards from the white longitudinal line, is glossy blackish, almost polished, sparingly and finely punctured; the disk is dull brownish with greenish rougher sculpture: about as densely but less deeply punctured as in *C. Gruti* Chd. The ♂♂ have narrower elytra than the ♀♀, their tips tapering (in the ♀ narrowly rounded) without spine. Underside bald, blue-blackish, base of femora not testaceous. Whole sternum with episterna and epimera finely wrinkled, the two apical joints of palpi maxillares testaceous, labrum of ♂ $\frac{2}{3}$ of the length of that of ♀, transverse, the middle part (a little more than $\frac{1}{3}$ of the breadth) slightly produced, without tooth.

The following two new species are closely allied.

Cosmema Wellmani, nov. spec.

Differt a *C. auropunctata* statura minore; labro perparum longiore; elytris brevioribus, antice eodem modo atque postice (fortiter) angustatis, ut medium magis dilatatum

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videatur; dorso paullo densius, parte polita marginali vix sparsius neque subtilius quam disco (grossius quam in illa specie) punctatis; stria alba marginali nulla, macula rotundata (aut perparum elongata) alba paullo post medium, altera minore elongata (margini magis approximata) ante apicem positis; toto pectore cyaneo-viridi-aescente; apice ♀ conjunctim paullo minus acuminato; ♂ parte (interdum paullo minus) nitida laterali elytrorum saepe densius quam ♀ punctata, apice singulo longe oblique, intus truncato, spina nulla. — Long. $7\frac{1}{2}$ —10 mm.

♀ ♂. A Dr. Cr. Wellman cum praecedente lecta.

In a few specimens there are some traces of a rudimentary 2nd »rib«, between the 1st rib and the anterior white spot.

Cosmema marginepunctata, nov. spec.

C. Wellmani simillima; elytris vix longioribus; ♀ postice singulis non rotundatis, angulo suturali acuto, dorso fere ut in *C. auropunctata* punctato, parte marginali perparum nitente (non subtilius quam dorso sculpta: ante maculam anticam semper elongatam et paullo ante medium positam non sparsius, post eam usque ad apicem densius quam disco punctata); ♂ apice singulo ut in *C. auropunctata* formato sculptura disci variabili, parte marginali opaca aut vix nitente semper dense nec subtilius quam disco punctata; ♀ labro et pectoris colore ut in *C. auropunctata* ♀, ♂ longiore quam *C. auropunctata* sed brevior quam *C. Wellmani* (margine antico medio minus producto quam in utraque); pectore variabiliter colorato. — Long. 9—11 mm.

♀ ♂. A Dr. Cr. Wellman cum praecedentibus lecta.

The margin of the elytra is in some specimens dull bluish, in others of the coloration of the disk. Very seldom the 2 white marginal spots get confluent. The smooth stripe (»rib«) of the elytra shows sometimes no trace of elevation.

Berlin, March 3, 1908.

NOTE III.

NOTES ON THE PENTATOMIDAE

(Hemiptera Heteroptera)

DESCRIBED BY DR. SNELLEN VAN VOLLENHOVEN

BY

Dr. H. SCHOUTEDEN.

During a short stay made last year in Leyden, I was enabled, through the courtesy of Mr. Ritsema, to examine the types of the Pentatomidae in the Leyden Museum, described by the late Snellen van Vollenhoven. Various doubtful species were thus identified and observations of previous authors controlled on the types. So a large part of the identifications hereafter quoted, were already made by C. Stål, who received from van Vollenhoven a number of his types for examination.

I thought it would be useful for hemipterists to have for the van Vollenhoven's species a revision like the one Mr. Distant is publishing on Walker's types in the British Museum. Curiously enough, a number of the species described in the year 1867 [published 1868?'] by the dutch entomologist, were described at the same time by Walker in the British Museum's Catalogue: I think it very probable that the names given by Walker take priority, though I could not ascertain it.

As to the enumeration of the species I thought it better to place them in the order in which they are found in van Vollenhoven's works; these latter are placed chronologically.

1) See p. 38 at the top.

I. — Essai d'une Faune entomologique de l'Archipel indo-néerlandais. — Première monographie: Famille des Scutellérides. (La Haye, 1863).

1. *Coleotichus pallidus* Voll.: p. 4, note.
Only a colour-variety of the common *C. costatus* Fabr., as I have noted in my Monograph of the genus.
2. *Poecilocoris aeneiventris* Voll.: p. 7, pl. I, fig. 3.
The type has not been found by me, but the species, judging from the description and figure, was correctly identified by Stål as a synonym of the common neotropical *Pachycoris torridus* Scop. 1772. The locality „Archipel indien” is erroneous.
3. *Tetrarthria marginepunctata* Voll.: p. 13, pl. I, fig. 6.
A variety of *T. variegata* Dall. 1851. The species shows considerable variation, as noted by van Vollenhoven himself for his *marginepunctata*.
4. *Callidea eximia* Voll.: p. 20, pl. I, fig. 8.
A good species, widely distributed; belongs to the genus *Calliphara*, subgen. *Chrysophara*.
5. *Callidea Caesar* Voll.: p. 21, pl. II, fig. 1.
Belongs to *Calliphara* s. str.
6. *Callidea variabilis* Voll.: p. 22, pl. I, fig. 9.
A variety of *Eucorysses atricapillus* Guér. 1834.
7. *Callidea quadrimaculata* Voll.: p. 23, pl. II, fig. 2.
A good species of the genus *Cosmocoris*.
8. *Callidea Schlegelii* Voll.: p. 24, pl. II, fig. 3.
A variety of the preceding (*C. quadrimaculata*).
9. *Callidea Stålii* Voll.: p. 24, pl. II, fig. 4.
Type of the genus *Calliscyta* Stål.
10. *Callidea ditissima* Voll.: p. 26, pl. II, fig. 5.
A species of the genus *Philia*.
11. *Callidea fastuosa* Voll.: p. 26, pl. II, fig. 6.
A *Philia*, near the preceding.
12. *Callidea Schwaneri* Voll.: p. 26, pl. II, fig. 7.
A variety only of *Chrysocoris eques* Fabr. 1794.

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13. *Callidea sumatrana* Voll.: p. 28, pl. II, fig. 9.
Variety of *Chrysocoris dilaticollis* Guér.
14. *Callidea modesta* Voll.: p. 29.
I did not see the type. The species belongs without doubt to *Chrysocoris* s. str.
15. *Callidea gibbosa* Voll.: p. 30, pl. II, fig. 10.
Identical with *Cosmocoris excavatus* Guér., according to Stål.
16. *Callidea bilumulata* Voll.: p. 33, pl. III, fig. 1.
A species of the genus *Chrysocoris*, subgen. *Chlorochrysa*.
17. *Callidea hypomelaena* Voll.: p. 33, pl. III, fig. 2.
A species of the same subgenus of *Chrysocoris*.
18. *Callidea hypherythra* Voll.: p. 34, pl. III, fig. 3.
Belongs also to *Chrysocoris* (*Chlorochrysa*).
19. *Callidea Bosschei* Voll.: p. 34, pl. III, fig. 4.
Belongs to the same subgenus as the preceding.
20. *Callidea gloriosa* Voll.: p. 35, pl. III, fig. 5.
Identical with *Philia jactator* Stål 1854.
21. *Callidea consul* Voll.: p. 36, note.
A variety of *Chrysocoris* (*Chlorolampra*) *Germari* Eschsch. 1822.
22. *Hotea fusca* Voll.: p. 38.
Only a form of *H. curculionoides* H.-Sch. 1835.
23. *Eurygaster ligneus* Voll.: p. 39.
A synonym of the common *Eurygaster nigrocucullatus* Goeze 1778.
24. *Podops vermiculatus* Voll.: p. 41, pl. III, fig. 7.
Belongs to *Scotinophara*.
25. *Podops tarsalis* Voll.: p. 42, pl. III, fig. 8.
Belongs to *Scotinophara*.
26. *Podops serratus* Voll.: p. 42, pl. III, fig. 9.
Is also a *Scotinophara*.
27. *Aspidestrophus lineola* Voll.: p. 44, pl. III, fig. 10.
According to Stål identical with his *A. morio* (1854).
28. *Chlaenocoris pusillus* Voll.: p. 45, pl. III, fig. 11.
The type of this little Pentatomid is in a bad

condition. I saw another specimen in the Brussels Museum.

It is a good form of the genus *Sepontia*.

29. *Coptosoma modestum* Voll.: p. 47, pl. IV, fig. 1.
30. *Coptosoma tondanense* Voll.: p. 48, pl. IV, fig. 2.
31. *Coptosoma marmoratum* Voll.: p. 48, pl. IV, fig. 3.
32. *Coptosoma Forsteni* Voll.: p. 49, pl. IV, fig. 4.
33. *Coptosoma Mülleri* Voll.: p. 49, pl. IV, fig. 5.

All these species are correctly placed in the genus *Coptosoma*.

34. *Tiarocoris sumatranus* Voll.: p. 51, pl. IV, fig. 6.

A valid genus and species.

35. *Brachyplatys radians* Voll.: p. 53, pl. IV, fig. 7.
36. *Brachyplatys crux* Voll.: p. 54, pl. IV, fig. 9.
37. *Brachyplatys pauper* Voll.: p. 54.
38. *Brachyplatys pallifrons* Voll.: p. 55, pl. IV, fig. 10.

All these *Brachyplatys*-species are correctly referred to this genus. *Brachyplatys pauper* is, according to Stål, possibly only a variety of *Br. subaeneus* Westw.

39. *Tarisa dromedarius* Voll.: p. 57, pl. IV, fig. 11.

Belongs to *Brachycerocoris*.

40. *Coleotichus fuscus* Voll.: p. 59.

A good species, which I described at length in my Monograph of the genus *Coleotichus*.

41. *Cantao rudis* Voll.: p. 60.

A good species also.

II. — Beschrijving van drie nieuwe soorten behoorende tot het geslacht van Hemiptera *Oplomus* (Tijdschrift voor Entomologie, VI, 1863).

42. *Oplomus rubropictus* Voll.: p. 121.

A synonym of *Oplomus dichroa* H.-Sch. 1839.

43. *Oplomus haematicus* Voll.: p. 122.

A variety of *Opl. pulcher* Dall. 1851.

44. *Oplomus flavoguttatus* Voll.: p. 123.

Identical with *Opl. tripustulatus* Fabr. 1803.

III. — Un genre nouveau d'Hémiptères Scutellérides (Tijdschrift voor Entomologie, VIII, 1865).

45. *Poseidon malayanus* Voll.: p. 63, pl. 1, figs. 3—5.

An interesting Plataspidine, which was already noted and named in 1864 by van Vollenhoven. (See „Verslag van de 19de Algemeene Vergadering der Nederlandsche Entomologische Vereeniging”, in Tijdschrift voor Entomologie, VII, pp. 30—31).

IV. — Eenige nieuwe soorten van het geslacht *Dalcantha*, Am. & Serv. (Tijdschrift voor Entomologie, IX, 1866).

46. *Dalcantha Westwoodii* Voll.: p. 217, pl. 11, fig. 5.

Belongs to the genus *Oxylobus*.

47. *Dalcantha Sancti Fargavii* Voll.: p. 218, pl. 11, fig. 6.

Identical with *Pycanum ponderosum* Stål 1854.

48. *Dalcantha Amyoti* Voll.: p. 219, pl. 11, fig. 7.

A species of the genus *Carpona*.

49. *Dalcantha Stålii* Voll.: p. 220, pl. 11, fig. 8.

Correctly placed in the genus *Dalcantha*.

50. *Dalcantha Servillei* Voll.: p. 220, pl. 11, fig. 9.

A synonym of *Oxylobus nigromarginatus* Stål 1865.

V. — Diagnosen van eenige nieuwe soorten van Hemiptera Heteroptera (Versl. en Mededeel. der K. Akad. van Wetensch., Afd. Natuurk., 2de Reeks, Deel II, 1867).

51. *Tetrarthria tenebrosa* Voll.: p. 175.

Identical with *T. callideoides* Dohrn 1863.

52. *Libyssa Westwoodii* Voll.: p. 175.

A variety of the common aethiopian *Callidea Dregei* Germ. 1837, identical with *L. purpurascens* Walk. 1868.

In my revision of the aethiopian *Callidea* and in the

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„Genera Insectorum” I placed the name given by van Vollenhoven as a synonym of *purpurascens*. I see now from a separate copy that van Vollenhoven's paper was issued in 1867, and *Westwoodii* takes thus priority.

53. *Callidea latefasciata* Voll.: p. 175.

Identical with *Philia balteata* Walk. The description given by Walker was also issued in 1867, but has probably priority.

54. *Callidea elongata* Voll.: p. 175.

A variety of *Calliphara dimidiata* Dall. 1851.

55. *Callidea celebensis* Voll.: p. 175.

Identical with *Cosmocoris peltophoroides* Walk. 1867.

The case is the same as with *Philia balteata*.

56. *Callidea Croesus* Voll.: p. 176.

This I consider now to be distinct from *Philia ditissima*, although very nearly related to it. *Ph. senator* also is a different species.

57. *Callidea daedalica* Voll.: p. 176.

Belongs to the genus *Chrysocoris*.

58. *Callidea puella* Voll.: p. 176.

Belongs to *Chrysocoris*, according to Lethierry & Severin.

59. *Pachycoris tigrinus* Voll.: p. 176.

A species of the genus *Polytes*.

60. *Bolbocoris emarginatus* Voll.: p. 177.

Belongs to *Tetrica* as I already mentioned elsewhere (Ann. Soc. Ent. Belg., L, p. 139, 1906).

61. *Cyrtomenus insignis* Voll.: p. 177.

62. *Aethus pallidicornis* Voll.: p. 177.

63. *Acatalectus luteo-marginatus* Voll.: p. 177.

64. *Acatalectus flavo-marginatus* Voll.: p. 177.

I did not see these species. N°. 61 is recorded to be a *Scoparipes*; N°. 62 is a synonym of *Geotomus pygmaeus* Dall. 1851; N°. 63 is an *Adrisa*, N°. 64 also.

65. *Dryptocephala divergens* Voll.: p. 178.

Identical with *Dr. punctata* Am. & Serv. 1843.

66. *Chlorocoris roseus* Voll.: p. 178.

A synonym of *Chl. depressus* Fabr. 1803.

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67. *Spudaeus modestus* Voll.: p. 178.

Identical with *Ectenus pudicus* Stål 1865. Mr. Distant kindly compared a specimen I possess from New-Guinea with the type of *Spudaeus lignarius* Walk. which was found to be identical. The name given by Walker (1867) must thus be placed as a synonym of *Ectenus pudicus*.

68. *Gynenica dalpadoides* Voll.: p. 178.

This species hitherto remained quite unrecognized. I found it was nothing else than *Platynopus tagalicus* Stål 1870, thus an Asopine! The species must take the name *Pl. dalpadoides*.

69. *Dalpada triguttata* Voll.: p. 179.

Identical with *D. trimaculata* Westw. 1837.

70. *Dalpada aenea* Voll.: p. 179.

A good species.

71. *Dalpada crux* Voll.: p. 179.

A good species also.

72. *Loxa minor* Voll.: p. 179.

In behalf of this species the genus *Fecelia* Stål has been erected.

73. *Diceraeus sellula* Voll.: p. 179.

An other enigmatic species, labelled in the collection as *Elaphocera sellula*. I found it was a *Prionocompastes*, probably identical with one of the javanese species described by Breddin, *Pr. salebrosus* or *Pr. vicarians*; but as the descriptions were not at hand at the time, I could not ascertain it; this I shall later do. I think it more probable, however, it is the *Pr. vicarians* of Breddin, which should thus come in synonymy.

74. *Diceraeus euschistoides* Voll.: p. 180.

This species was stated by Stål to be identical with *Euschistus fissilis* Uhler 1871. The name given by van Vollenhoven takes thus priority and the species must be named *E. euschistoides*, not *E. fissilis* as adopted in the Catalogues.

75. *Proxys rhododactylus* Voll.: p. 180.

According to Stål, this is a synonym of *Berecynthus*

- delirator*. I did not see the type, but I found under *Proxys hastator* two specimens of the *Berecynthus*.
76. *Mormidea vidua* Voll.: p. 180.
Identical with *Padaeus irroratus* H.-Sch. 1839.
77. *Mormidea trisignata* Voll.: p. 181.
Identical with *Carbula trinotata* H.-Sch. 1853.
78. *Mormidea haematica* Voll.: p. 181.
A good species of the genus *Carbula*.
79. *Mormidea hoplites* Voll.: p. 181.
Belongs to *Cuspicona*.
80. *Hoplistodera gibba* Voll.: p. 181.
A synonym of *Astyanax trimaculata* Lep. & Serv. 1825.
(angulis humeralibus obtusis).
81. *Hoplistodera decora* Voll.: p. 181.
Identical with *H. convexa* Dall. 1851, as stated by Stål.
82. *Hoplistodera Schwaneri* Voll.: p. 182.
Identical with *Eysarcoris aenescens* Walk. 1867. It is not evident to me if *Schwaneri* has priority or not.
83. *Alcimus venustus* Voll.: p. 182.
A species of *Alcimocoris* (*Alcimus*) possibly identical with *Alc. lineosus* Walker (the description of which was not at hand), according to Breddin.
84. *Alcimus collaris* Voll.: p. 182.
Another good species of *Alcimocoris* (*Alcimus*).
85. *Eysarcoris obscurus* Voll.: p. 182.
Correctly identified in the genus.
86. *Eysarcoris geminatus* Voll.: p. 182.
An *Eysarcoris*, identical with *E. quadrimaculatus* Hagl. 1868, which comes in synonymy.
87. *Eysarcoris lineola* Voll.: p. 183.
Not found. According to Stål, a synonym of *E. humeralis* Dall. 1851.
88. *Eysarcoris coecus* Voll.: p. 183.
A good species of the genus *Eysarcoris*.
89. *Eysarcoris marmoratus* Voll.: p. 183.
Belongs to *Menida*.

90. *Eysarcoris rufoscutellatus* Voll.: p. 183.
I place this species, provisionally at least, in the genus *Menida*.
91. *Coenus punctatissimus* Voll.: p. 183.
Identical with *C. delius* Say 1831.
92. *Pentatoma pallidiventris* Voll.: p. 183.
Identical with *Tolumnia trinotata* Westw. 1837.
93. *Pentatoma chloris* Voll.: p. 184.
A synonym of *Hyrmine chlorina* Stål 1858.
94. *Pentatoma ignobilis* Voll.: p. 184.
Belongs to the genus *Antestia*.
95. *Pentatoma plebeja* Voll.: p. 184.
A synonym of *Antestia partita* Walk. 1867, which has apparently the priority.
96. *Pentatoma Arlechino* Voll.: p. 184.
A species of the genus *Antestia*.
97. *Pentatoma hilaris* Voll.: p. 184.
A species of *Antestia*.
98. *Pentatoma scurra* Voll.: p. 185.
A species of *Antestia*.
99. *Pentatoma nurus* Voll.: p. 185.
Referred by Stål (in litteris) with doubt to *Antestia cruciata* var. More probably a good species, as catalogued in the »*Enumeratio*''.
100. *Strachia varians* Voll.: p. 185.
Belongs to *Stenozygum*.
101. *Strachia sanguineguttata* Voll.: p. 185.
Identical with *Stenozygum gemmeum* Walk. 1867, which probably has priority.
102. *Strachia rubescens* Voll.: p. 186.
Identical with *Stenozygum insignatum* Walk. 1867.
103. *Strachia quincunx* Voll.: p. 186.
A synonym of *Antestia Chambereti* Le Guill. 1841.
104. *Strachia coelestis* Voll.: p. 186.
Identical with *Stenozygum persignatum* Walk. 1867.
105. *Strachia instabilis* Voll.: p. 186.
A species of the genus *Antestia*.

106. *Vulsirea Tau* Voll.: p. 186.
Only a variety of *Vulsirea violacea* Fabr. 1803.
107. *Vulsirea hemichloris* Voll.: p. 187.
A synonym of *Hyrmine sexpunctata* L. 1758.
108. *Rhaphigaster melanosticticus* Voll.: p. 187.
A species of the genus *Zangis*, identical with *Z. subpunctata* Walk. 1867.
109. *Rhaphigaster nitens* Voll.: p. 187.
A species of *Menida*, near to *M. formosa* Westw.
110. *Rhaphigaster megalops* Voll.: p. 187.
Appears to belong to the genus *Coccotheris*.
111. *Rhaphigaster celebensis* Voll.: p. 187.
A species of *Acrosternum*.
112. *Rhaphigaster Iudekingii* Voll.: p. 187.
Belongs to *Zangis*; identical with *Z. impar* Walk. 1867.
113. *Cuspicona basimaculata* Voll.: p. 188.
A synonym of *Vitellus pugionatus* Stål 1865.
114. *Cuspicona Eltio* Voll.: p. 188.
Identical with *Vitellus Germari* Guér.
115. *Cuspicona antica* Voll.: p. 188.
According to Distant, this is wrongly labelled „Hindostan” in the Leyden Museum, being only found in the Malay Archipelago. I think the species would more correctly be referred to *Zangis*.
116. *Placosternum Bison* Voll.: p. 188.
A *Placosternum* very near to *Pl. taurus*.

VI. — Essai d'une Faune entomologique de l'Archipel indo-néerlandais. — Troisième monographie: Famille des Pentatomides. (La Haye, 1868).

117. *Cazira coccinelloides* Voll.: p. 4.
This species, summarily alluded to by van Vollenhoven, escaped hitherto record. It is identical with *Blachia ducalis* Walk. 1867.

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118. *Canthecona furcellata* Voll. (nec Wolff): p. 5.
Vollenhoven wrongly identified his species with *Cantheconidea furcellata*, and Breddin 1902 has renamed it *C. Vollenhoveni*.
119. *Canthecona rufescens* Voll.: p. 6, pl. I, fig. 2.
A good species of *Cantheconidea*.
120. *Canthecona apicalis* Voll.: p. 6, pl. I, fig. 3.
A synonym of *Platynopus melacanthus* Boisd. 1835.
121. *Canthecona plebeja* Voll.: p. 7, pl. I, fig. 4.
A good species of *Cantheconidea*.
122. *Canthecona mitis* Voll.: p. 7, pl. I, fig. 5.
A species of *Cantheconidea*.
123. *Canthecona biguttata* Voll.: p. 8, pl. I, fig. 6.
Another synonym of *Platynopus melacanthus* Boisd.
124. *Canthecona variabilis* Voll.: p. 8, pl. I, figs. 7—8.
A species of *Cantheconidea*.
125. *Canthecona acuta* Voll.: p. 9, pl. II, fig. 1.
A good species of *Cantheconidea*.
126. *Canthecona decorata* Voll.: p. 9, pl. II, fig. 2.
A synonym of *Platynopus laetus* Walk. 1867.
127. *Asopus carnifex* Voll.: p. 12, pl. II, fig. 3.
Apparently a variety of *Amyotea erythromelas* Walk. 1867.
128. *Asopus distigma* Voll.: p. 13, pl. II, fig. 4.
A synonym of *Amyotea hamata* Walk. 1867.
129. *Asopus semiviolaceus* Voll.: p. 13, pl. II, fig. 5.
Identical with *Amyotea frontalis* Walk. 1867.
130. *Asopus Bernsteinii* Voll.: p. 14, pl. II, fig. 6.
A synonym of *Amyotea reciproca* Walk. 1867.
131. *Cyrtomenus insignis* Voll.: p. 16, pl. II, fig. 7.
I did not see this species (see N^o. 61) which appears to be a *Scoparipes*.
132. *Aethus pallidicornis* Voll.: p. 17, pl. II, fig. 8.
Recorded as a synonym of *Geotomus pygmaeus* Dall. 1851 (see N^o. 62). Not seen.
133. *Acatalectus luteomarginatus* Voll.: p. 19, pl. II, fig. 9.
An *Adrisa*; not seen (see N^o. 63).

134. *Mucanum patibulum* Voll.: p. 22, pl. III, fig. 1.
A good species.
135. *Pygoplatys subrugosus* Voll.: p. 23, pl. III, fig. 2.
A good species of *Pygoplatys*.
136. *Pygoplatys minax* Voll.: p. 23, pl. III, fig. 3.
A good species.
137. *Pygoplatys roseus* Voll.: p. 24, note.
A synonym of *Pygoplatys acutus* Dall. 1851.
138. *Tessaratoma javanica* var. *stictica* Voll.: p. 26.
Identical with *Tessaratoma conspersa* Stål 1863.
139. *Tessaratoma javanica* var. *timorensis* Voll.: p. 26, pl. III, fig. 5.
A distinct species of *Tessaratoma*.
140. *Eusthenes scutellaris* Voll.: p. 28, pl. III, fig. 6.
Is not *Eusthenes scutellaris* H.-Sch.; Stål has renamed it (1870) *E. Jason*.
141. *Eusthenes minor* Voll.: p. 29.
The true *Eusthenes scutellaris* H.-Sch. 1839.
142. *Oncomerus Bernsteinii* Voll.: p. 30, pl. IV, fig. 1.
A good species. — In his Monograph of the genus *Oncomerus*, Dr. Horvath gives as a character of *O. Bernsteinii*: »fascia antica angusta utrinque abbreviata pronoti ... flavo-testacea." This is not exact, as some of the Leyden-specimens have the fascia nearly or quite obsolete.
143. *Pycanum Westwoodii* Voll.: p. 33, pl. III, fig. 7.
Belongs to the genus *Oxylobus*.
144. *Pycanum Amyoti* Voll.: p. 34.
Belongs to the genus *Carpona*.
145. *Lyramorpha Vollenhovii* Voll. (pars): pl. IV, figs. 3—3a.
Dr. Horvath has named *Lyramorpha ambigua* the species figured by van Vollenhoven in figs. 3 and 3a ♂.
146. *Lyramorpha perelegans* Voll.: p. 35, note.
A species very briefly alluded to by van Vollenhoven and hitherto omitted in all catalogues. I did not see the type.
147. *Cyclopelta obscura* var. *trimaculata* Voll.: p. 37.
The species is correctly identified.

148. *Aspongopus Mülleri* Voll.: p. 39, pl. IV, fig. 5.
Identical with *Aspongopus marginatus* Costa 1847.
149. *Megarhynchus intermedius* Voll.: p. 44.
Correctly placed in this genus.
150. *Megarhynchus fuscus* Voll.: p. 44.
Correctly placed in this genus.
151. *Megymenum semivestitum* Voll.: p. 46, pl. IV, fig. 6.
A good species of *Megymenum*.
152. *Megymenum quadratum* Voll.: p. 46, pl. IV, fig. 7.
Correctly placed in this genus.
153. *Megymenum anacanthum* Voll.: p. 46, pl. IV, fig. 9.
Correctly placed in this genus.
154. *Megymenum parallelum* Voll.: p. 48, pl. IV, fig. 10.
A distinct species.
-

VII. — Description de six espèces nouvelles ¹⁾ de Hémiptères
Hétéroptères (Tijdschrift voor Entomologie, XII, 1869).

155. *Tetrarthria tenebrosa* Voll.: p. 255, pl. XI, fig. *a*.
A synonym of *Tetrarthria callideoides* Dohrn 1863,
as indicated under N°. 51.
156. *Libyssa Westwoodii* Voll.: p. 256.
Already referred to (sub N°. 52), as a variety of
Callidea Dregei.
157. *Callidea elongata* Voll.: p. 257, pl. XI, fig. *b*.
A variety of *Calliphara dimidiata* (see N°. 54).
158. *Callidea latefasciata* Voll.: p. 257, pl. XI, fig. *d*.
Synonym of *Philia balteata* as indicated under N°. 53.
159. *Callidea celebensis* Voll.: p. 258, pl. XI, fig. *c*.
Synonym of *Cosmocoris peltophoroides* (see N°. 55).
160. *Callidea croesus* Voll.: p. 259, pl. XI, fig. *e*.
A species of *Philia* (see N°. 56).
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¹⁾ Short diagnoses of these species appeared already in 1867 and are mentioned on pages 37 and 38.

VIII. — Recherches sur la Faune de Madagascar et de ses dépendances, d'après les découvertes de François P. L. Pollen et D. C. van Dam. — Cinquième partie: Entomologie. — (Leiden, 1869).

161. *Podops breviscutum* Voll.: p. 13.

A synonym of *Thoria sinuata* Sign. 1861.

Brussels, December 9, 1907.

NOTE IV.

OBSERVATIONS ON SOME SPECIES OF THE
GENUS LYRAMORPHA WESTW.

(Hemiptera Heteroptera)

BY

Dr. H. SCHOUTEDEN.

(With 2 figures).

1. *Lyramorpha pallida* Westwood and *L. rosea* Westwood.

In his »Catalogue of Hemiptera in the Collection of the Rev. W. F. Hope», part I, London 1837, Westwood founded the genus *Lyramorpha*, with two species, *L. rosea* and *L. pallida*, both from New Holland.

The descriptions of these species are as follows:

L. rosea Hope [= Westwood]. — Supra cum pedibus et antennis rosea, marginibus thoracis et hemelytrorum æneis, thoracis margine antico pallido; corpore subtus virescenti luteo. — Long. Corp. Lin. 11.

L. pallida Hope [= Westwood]. — Griseo lutescens, thorace et hemelytrorum corio interdum virescenti tincto margine tenui roseo, hujus apicibus puncto sublaterali albo; corpore subtus cum pedibus et antennis pallidis. — Long. Corp. Lin. 10¹/₂.

From the diagnosis of the genus is to be seen that the antennæ are four-jointed.

These specific descriptions, although very concise, appear to represent two distinct species. Now, in the »Enumeratio Hemipterorum», part I, published in 1870, Stål mentions *L. pallida* only as a synonym of *L. rosea*; it does not

appear, however, that he has seen the types, nor does he mention the species as present in the Stockholm Museum or in Signoret's collection.

From this time this synonymy was thoroughly admitted, so in the Lethierry and Severin Catalogue.

In 1900 Distant examined the types of Westwood's descriptions in the Hope Catalogue and enumerated the species in their proper systematic position. We find in his list *L. pallida* indicated, as Stål did, as a synonym of *L. rosea* ¹⁾).

In 1900 Horvath published a valuable monograph of the genus *Lyramorpha* ²⁾), and as he did not see the types of Westwood, he admitted also the synonymy given by Stål and by Distant. Thus he describes only one species with four-jointed antennæ, viz. *L. rosea*, with *L. pallida* quoted as a synonym.

Looking through, last year, the Pentatomidæ in the collection of the Leyden Museum, I found there, to my great surprise, a specimen of both *L. rosea* and *L. pallida*, marked by the late Snellen van Vollenhoven, as having been received from Westwood himself.

At first sight the species looked different, and as the specimens were, fortunately enough, both of the male sex, an examination of the genital segment proved they were quite distinct!

The specimens in the Leyden Museum agree very good with the descriptions reproduced here above, and I consider them to be types, or, if preferred so, cotypes of Westwood.

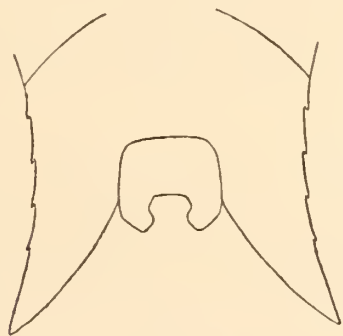
The antennæ of both specimens are partially broken off, but they were certainly, as expressly mentioned by Westwood, four-jointed. Thus there are two species to be included in the genus *Lyramorpha* s. str., which can

1) Proc. Zool. Soc. London for the year 1900, p. 823.

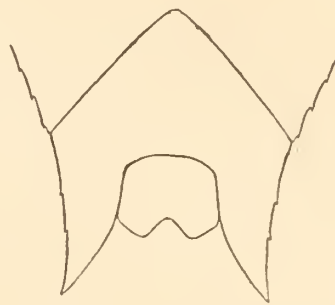
2) Természetrájsi Füzetek, Vol. XXIII, p. 341.

easily be separated by the following characters, noted by me in Leyden:

L. rosea: Limbo costali corii olivaceo («æneo» teste Westwood). Corio apice extus concolore, haud pallido-maculato. Pronoto rugoso-punctato. Segmento genitali maris profunde inciso, incisura fundo plano, lateribus curvatis (fig. 1).



1. *L. rosea* Westw.



2. *L. pallida* Westw.

L. pallida: Limbo costali corii roseo. Corio apice extus macula distinctissima pallida ornato (semper?). Segmento genitali maris minus profunde inciso, incisura angulari (fig. 2).

These characters show sufficiently that the species must be treated as distinct. Horvath, when he wrote his monograph, had certainly before him *L. pallida* only, as is shown by the figure of the ♂ segment he reproduces. His *L. rosea* must thus be regarded as a synonym of *L. pallida* of Westwood. The true *L. rosea* Westw. was unknown to him.

The figures I add here, were kindly drawn for me after the Leyden-specimens by Dr. van der Weele. They clearly represent the striking difference of the apical segment in the ♂ of both species.

2. *Lyramorpha Vollenhovii* Stål and Vollenhoven.

In his »Essai d'une Faune entomologique de l'Archipel Indo-néerlandais», third monograph, the Hague 1868, van Vollenhoven describes (pp. 35 and 36) and figures (Pl. IV, fig. 3) a *Lyramorpha*, which he identifies with Stål's *L. Vollenhovii* [Tijdschr. v. Entom. (2) II, p. 124 (1867)].

Notes from the Leyden Museum, Vol. XXX.

As habitat he gives: »Halmaheira septentrionalis, Morotai, Waigeou, Nova Guinea et Aru».

At the end of the description, where he mentions the maculate character of the elytra, van Vollenhoven writes: »L'individu de la Nouvelle Guinée et celui d'Aru ne portent point de marques ni de taches sur les élytres».

On the plate are given a coloured drawing of the insect (fig. 3) and figures of the ♂ and ♀ genital segments (fig. 3 ♂, 3a ♂ and 3 ♀), but these latter belong to two quite different species.

Fig. 3a ♂ evidently was made after the specimen represented as fig. 3; figs. 3 ♂ and 3 ♀ refer to another species.

In his *Lyramorpha*-monograph Horvath pointed out that only the last figures: 3 ♂ and 3 ♀ belong to the true *L. Vollenhovii* Stål. Figs. 3 and 3a ♂ are quoted by him under his new *L. ambigua*, of which the only specimens the exact locality of which was known to him, came from the island Salawatti.

As *L. Vollenhovii* is the only species with maculate corium, it is evident that figs. 3 and 3a ♂ were made after the specimens alluded to from New Guinea and Aru.

These specimens are still in the Leyden Museum and I could examine them. Both are males and their genital segments are different.

The specimen from Aru has the genital segment much like that figured by Horvath for *L. parens* Bredd., more deeply emarginate than is the case in *L. ambigua*; the apical spines of the last abdominal segment agree also.

The specimen from New Guinea has the genital segment resembling Horvath's drawing of *L. ambigua*; but the spines of the sixth segment are acute, more produced and evidently surpassing the apex of the genital segment.

Neither of them quite agrees with van Vollenhoven's figures, but I think it most probable that the represented specimen is the one from New Guinea, the differences being within the limits of errors we frequently met with in the »Essai«.

Notwithstanding the different development of the spines I think this specimen can be referred, as Horvath did with regard to the figures, to *L. ambigua*. I find not unfrequently that there is some variation in the length of these spines, even in *Lynamorpha*.

New Guinea (evidently the Dutch territory) can thus be added to the known habitats of *L. ambigua* Horv.

Brussels, March 6, 1908.

NOTE V.

ÜBER EINE NEUE DASYPROCTUS-ART AUS JAVA

VON

FRANZ FRIEDR. KOHL.*Crabro (Dasiproctus) Jacobsoni*, n. sp.

♂ — Long. 7—8 mm. Niger, ex magna parte (supra) opacus. Tergita 2., 3. et 4. utrinque maculata, 5. et 6. interrupte fasciata, hoc nonnunquam fascia integra flava. Flava sunt insuper: linea suprabasalis mandibularum, scapi ex parte, fascia interrupta collaris, alarum squamulae et 2—4 maculae laterales scutelli. Alae subhyalinae.

Flagellum integrum. Frontis cavatura scapos excipiens supra acriter marginata. Caput densius punctatum, ante stemmata coarctate punctatum rugosum. Punctatura mesonoti subtilius quam capitis, subdensa. Epicnemium posterius mesothoracis lateris antice sutura crenata marginatum ut anterius. Mesothoracis latera subtilissime punctulata. Segmenti mediani latera nitida, oblique striata, supra et postice acriter et grosse- carinato- et crenato-marginata. Area dorsalis et postica sat grossis rugis reticulata. Petiolus subelongatus. Tibiae posticae spinulosae. Metatarsus anticus haud insignis.

Der Hauptsache nach mattschwarz. Glänzend sind: die Prosternen, die Epicnemialfluren der Mesothoraxseiten, das Mittelsegment, der Basalteil des 1. Tergits bis zu den Stigmen, die Unterseite des Abdomen, die Schienen und Tarsen. Gelb sind: die Oberkante der Mandibeln mit einer basalgelegenen Linie, der grösste Teil der Fühlerschäfte -- meist mit Aus-

nahme einer dunkeln Makel hinten innen, eine schmal unterbrochene Binde des Pronotum, die Schulterbeulen, ein oder zwei Makelchen bei den Vorderecken des Schildchens, ovale Seitenmakelchen auf Tergit 2, 3 und 4, eine mitten zu zwei Querstreifen unterbrochene Binde auf Tergit 5, eine ganze oder mitten kaum unterbrochene Binde an der Vorderhälfte des 6. Tergits. — Vorder- und Mittelschenkel grösstenteils schwarz, nur hinten am Ende gelb gefleckt, die Hinterschenkel ganz schwarz. Schienen und Tarsen gelb und schwarz, das Schwarz vorzüglich auf der Innenseite. Tarsen pechrot. Flügel nur wenig getrübt.

Kopf sehr deutlich gestochen punktiert. Obere Stirne gedrängt-runzelig punktiert. Scheitel und Schläfen dicht — aber bei weitem nicht gedrängt punktiert. Die Punktierung der Schläfen ist viel zarter als die des Scheitels. Die Mulde der unteren Stirne, von der die Fühlerschäfte aufgenommen werden, ist oben beim Übergange zum horizontalen, oberen Stirnteil scharf gerandet. Der Eindruck, wie er bei den meisten Crabronen knapp am Innenrande der Netzaugen etwas vor dem vorderen Nebenaugen zu beiden Seiten zeigt und meist oval ist, ist auch bei dieser Art vorhanden, nicht sehr auffällig und noch oval. Letzteres erwähne ich, weil er beim ♂ des *D. ceylonicus* Sauss., der auch auf Java vorkommt, winzig klein und rund — tüpfelartig ist. Der Abstand der hinteren Nebenaugen voneinander ist unbedeutend geringer als ihr Abstand von den Netzaugen. Fühler verhältnismässig nicht kräftig. Die Mittelpartie des Clypeus ragt ein wenig plattenartig vor.

Punktierung des Mesonotum ähnlich wie die des Scheitels, weniger kräftig. Punktierung der Mittelbruststückseiten sehr fein, undeutlich, weniger dicht. Die vordere Episternalnaht und die Naht, ganz ein klein wenig vor dem hinteren Epicnemium oberhalb der Mittel Hüften, sind gleich kräftig und gekerbt. Die etwas glänzenden Mittelsegmentseiten sind deutlich längsgestreift (secundäre Geschlechtsauszeichnung), vom oberen und vom

hinten abfallenden Mittelsegmentteile durch einen kielartigen Rand, der von einer Art Kerbfurche begleitet wird, scharf abgesetzt. Mittelsegment oben und hinten sehr derb netzrunzelig, gitterig.

Der Petiolus ist keulenförmig, etwa 2.5 mal so lang als an der breitesten Stelle breit; dem Augenmasse nach scheint er weit länger zu sein.



Petiolus
(Tergitum I mum)
Crabro (Dasyproctus)
Jacobsoni, n. sp.

An den Beinen kann ich keine besondere Auszeichnung wahrnehmen; die Hinterschienen sind bedornt.

♀ unbekannt.

Die Art ist zu Ehren des Herrn Edward Jacobson, der sie auf Java sammelte, zubenannt. Einige Stücke (♂) dieser Art, aus der Javaner Ausbeute des Hymenopterologen Herrn Dr. O. Schmiedeknecht, besitzt das kk. naturhistorische Hofmuseum in Wien.

Wien, 3. März 1908.

NOTE VI.

DESCRIPTION D'UNE
 ESPÈCE NOUVELLE DU GENRE LITARGUS
 (COLEOPTERA: MYCETOPHAGIDAE)

PAR

A. GROUVELLE.

Litargus rugosulus, n. sp.

Ovatus, convexus, nitidus, ater, ochraceo variegatus, fusco-griseo et ochraceo pubescens, rugosulus. Antennae subincrassatae, basi et ultimi articuli apice dilutioribus. Caput triangulare, antice rotundatum; fronte crebre irregulariterque punctata, stria interantennali recta, ad extremitates antrorsum reflexa; epistomo parce punctato. Prothorax antice truncatus, lateribus arcuatus, basi utrinque subsinuatus; marginibus lateralibus praecipue ad angulos posticos et basi ochraceo marginatis. Scutellum subsemicirculare, punctatum. Elytra paulo duplo longiora quam simul in maxima latitudine lata; dense punctata, punctis majoribus, sublineato-dispositis, intermixtis, punctis transversim substrigosis; singulo elythro ochraceo novies maculato: 1^a. macula, minima, juxta scutellum suturamque; 2^a. subhumerale, oblonga; 3^a. prope suturam, circiter ad longitudinis primam sextam partem, triangulare; 4^a. sublaterale, minima, suboblonga, ad primam quintam partem; 5^a. propius latus quam suturam, aliquid ultra medium, oblonga; 6^a. sublaterale, ultra quintam; 7^a. suturali, subtransversa, extus antice posticeque lineato-extensa ad longitudinis secundam tertiam partem; 8^a. sublaterale ultra septimam, oblonga; 9^o. subapicali, minima, subpunctiformi; lateribus fulvo-ochraceo tenuiter marginatis et stricte reflexis. Pedes infuscati. — Long. 3 mill.

Ovale, convexe, brillant, noir, subrugueux, varié de testacé jaunâtre, couvert d'une pubescence couchée, moyennement

longue, assez dense, entremêlée de poils un peu plus forts, cendrés-foncés sur les parties noires, jaunâtres sur les parties claires. Antennes un peu épaisses; base rougeâtre, sommets des trois articles de la massue jaunâtres. Tête triangulaire, arrondie en avant, à peu près aussi longue que large, densément et irrégulièrement ponctuée sur le front, éparsément sur l'épistome; strie interantennaire droite, recourbée en avant aux extrémités. Prothorax nettement plus de deux fois plus large à la base que long; bord antérieur subtronqué; côtés arqués surtout en avant, finement rebordés, étroitement marginés de jaunâtre, plus largement vers les angles postérieurs; base subsinuée de chaque côté de l'écusson, finement rebordée. Ecusson subdemicirculaire, ponctué. Elytres arrondis ensemble à l'extrémité, présentant leur plus grande largeur vers le premier tiers de la longueur, un peu moins de deux fois aussi longs que larges dans leur plus grande largeur, couverts d'une ponctuation dense, formée de points transversalement substrigueux, entremêlés de points plus forts, presque disposés en lignes; épaules arrondies, bords latéraux étroitement réfléchis, finement rebordés de jaunâtre; sur chaque élytre neuf taches jaunâtres: la première, petite, dans l'angle de la suture et de l'écusson; la 2^{me} en avant du calus humérale, oblongue, plus grande que la 1^{ère}; la 3^{me} près de la suture, vers le premier sixième de la longueur, triangulaire; la 4^{me} sublatérale, petite, suboblongue, vers le premier cinquième de la longueur; la 5^{me} plus près du bord latéral que de la suture, un peu au delà du milieu, oblongue; la 6^{me} sublatérale, au delà de la 5^{me}; la 7^{me} suturale, vers le 2^{me} tiers de la longueur, transversale, s'étendant extérieurement en avant et en arrière en forme de ligne; la 8^{me} sublatérale, au delà de la 7^{me}; la 9^{me} subapicale, ponctiforme. Pattes rembrunies.

Hab. Java or.: Ranoe Koembala (= grand lac), 2000 M., près du Smeroe. — Un seul exemplaire pris par Mr. Edw. Jacobson et offert par lui au Musée de Leide.

Paris, 4 Avril 1908.

NOTE VII.

NOTIZEN ÜBER GERSTAECKER'S MYRMELEONIDEN

VON

Dr. H. W. VAN DER WEELE.

Herr Professor Dr. G. W. Müller in Greifswald übermittelte mir, vor ungefähr einem Jahre, die von weiland Professor Dr. A. Gerstaecker in den Mittheilungen des naturw. Ver. für Neu-Vorpommern und Rügen, Band XVI, XIX, XX und XXV beschriebenen Myrmeleoniden der Gattungen: *Palpares*, *Acanthaclisis*, *Syngenes* und *Cymothales*. Obschon ich dieselben bald danach verglichen habe, so konnte ich wegen der vielen Arbeit, welche in der entomologischen Abteilung unseres Museums notwendigerweise abgetan werden musste, vorläufig nicht die Zeit zu einer Veröffentlichung des betreffenden sehr wertvollen Materiales finden. Zugleich benütze ich diese Gelegenheit um noch einige Bemerkungen über andere Arten daran an zu knüpfen.

Obschon synonymische Notizen über einige der Gerstaeckerschen Arten schon anderweitig veröffentlicht wurden, will ich dieselben der Vollständigkeit wegen hier noch einmal wiederholen.

Palpares praetor G. XXV, p. 111 (1893). — Die Typen sind: ein sehr grosses ♀ von Quilliu, Gabun, ein kleineres ♀ und dito ♂ aus Chinchoxo. Die Flügel des grossen ♀ sind verhältnissmässig etwas breiter als bei den anderen Exemplaren, aber es ist nicht daran zu zweifeln, dass alle drei zu derselben Art gehören. Sie bildet die westliche Form der in Natal und Ost-Afrika vorkommenden *P. inclemens* auct. nec Walker. Walker's Beschreibung passt auf beide Arten und auch seine Typen gehören zu beiden, wie ich 1906 in Londen selbst konstatiren konnte, weil das erste Exem-

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plar, in seinem Kataloge mit a bezeichnet, das ohne Localitätsangabe ist, mit *praetor* vollkommen identisch ist, während die Exemplare welche b und c bezeichnet sind und aus Port Natal stammen, zu der als *inclemens* bezeichneten Form gehören. Die ostafrikanische *inclemens* muss also in Zukunft einen anderen Namen haben.

Bekanntlich sind *Myrmeleon cephalotes* Wlk. und *furfuraceus* Wlk., beide vom Congo, identisch mit seinem *inclemens* und mit *praetor* Gerst., aber auch Rambur's *P. latipennis* vom Senegal ist nach der Beschreibung wohl nichts anderes als ein bleiches, nicht stark ausgefärbtes ♀ dieser Art, sodass wir folgende Synonymie aufstellen können:

Palpares latipennis Rbr. = *inclemens* Wlk. (part.) = *cephalotes* Wlk. = *furfuraceus* Wlk. = *praetor* Gerst. Vielleicht wurde die Art noch von einem der früheren Autoren beschrieben, aber es fehlt mir momentan die Litteratur, um diese Frage noch eingehender zu behandeln.

Palpares solidus G. XXV, p. 113 (1893). — Diese Art gehört zu den grossscheideligen *Palpares*-Arten, von welchen der *P. cephalotes* Klug den Typus bildet. Die meisten Arten dieser Gruppe kommen in Ost-Afrika und Arabien vor, obschon auch einige in Indien und West-Afrika sich finden. Die Type ist ein ♀ aus Mesopotamien, Mardin, von Dr. O. Staudinger erhalten; die Art ist deutlich von allen anderen dieser Gruppe zu unterscheiden.

Palpares festivus G. XXV, p. 115 (1893). — Gehört in die Gruppe, welche sich durch einfärbiges, dunkles Körperkoloriet, ohne Längsstreifen und durch kurze Labialpalpen, welche wenig länger als die Maxillarpalpen sind, unterscheidet. Diese Art erinnert stark an die dunklen *Tomatares*-Arten, vor allem an *T. spectrum* (Rbr.), und ist auch zweifelsohne nahe mit dieser Art verwandt. Vielleicht müssen mit der Zeit in diese Gattung noch eine ganze Reihe anderer *Palpares*-Arten aufgenommen werden. Die Type ist ein ♀, dessen Abdomenspitze abgebrochen ist, von

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Delagoabai, von E. Heyne erhalten. Was den *P. flavofasciatus* Mc Lachl., Journ. Linn. Soc. Zool. IX, p. 242 (1869), anbetrifft, muss ich bemerken, dass *festivus* wohl nichts anderes als ein Synonym desselben sein kann. Ich sah 1903 die Type in Mac Lachlan's Sammlung und verglich sie mit Exemplaren aus Nyassa und Zambesi meiner Sammlung ¹⁾, die mit denselben übereinstimmen. Dieselben Exemplare sind aber auch identisch mit G.'s *festivus*-Type. Nur ist die Zahl der lichten Querbänder der Vorderflügel ziemlich wechselnd, da bei *festivus*-Type nur die basale, bei meinen Exemplaren die basale und apicale, und bei der *flavofasciatus*-Type drei Querbänder entwickelt sind.

Palpares digitatus G. XXV, p. 117 (1893). — Gehört zu derselben Gruppe wie die vorige Art und sieht ihr sehr ähnlich; sie ist von derselben verschieden durch die relativ längeren, schmälere Flügel, deren Zeichnung nach demselben Prinzip gebildet, aber viel blasser ist und eine viel geringere Ausdehnung besitzt. Doch bildet sie nicht die westliche Form derselben, weil sie mir auch in einer etwas abweichenden Form aus Ost-Afrika bekannt ist. Der *Palpares voeltzkowi* Kolbe aus Madagascar ist ihre Inselform. Die Type ist ein ♀ von der Goldküste, ex coll. Dr. O. Staudinger.

Palpares aegrotus G. XIX, p. 98 (1888). — Gehört zu derselben Gruppe wie *P. tigris* (Dalm.) = *manicatus* Rbr. und ist, obschon sehr ähnlich, deutlich von ihr verschieden, u. a. durch ihre kleineren und relativ viel breiteren Flügel und das viel dunklere Kolorit des Abdomens. Das ♂ ist noch unbekannt und deswegen ist die Verwandtschaft der Art noch nicht ganz klar. Die Type ist ein ♀ aus Angola, Malange, von Michow.

Palpares obsoletus G. XIX, p. 95 (1888). — Diese aus dem Congogebiete stammende Art gehört ebenfalls in die Nähe von *aegrotus* G. und *tigris* (Dalm.). Von letzterer ist sie

1) Seit Mai 1907 im Leidener Museum.

nur wenig verschieden und ist vielleicht nur eine Subspecies derselben. Weil aber das ♂ noch immer unbekannt geblieben ist, lässt sich dieses nur vermuten. Die Typen, zwei ♀♀ von Stanley Pool, ex coll. Dr. O. Staudinger, sind vollkommen gleichartig.

Acanthaclisis rufescens G. XVI, p. 10 (1884). — Diese Art ist nach der Type wohl nichts anderes als die unter so vielen Namen bekannt gemachte *A. distincta* Rbr. Ich habe die Synonymie, so weit ich sie aufstellen konnte, in dem Bull. scient. France et Belgique, XLI, p. 264 (1907) angegeben. Die Type ist ein ♀, dessen Abdomen fehlt; es ist bezeichnet: Mungo, Mai 1874, Buchholz.

Acanthaclisis felina G. XXV, p. 118 (1893). — Die Type, ein ♂ aus Lindi, Ost-Afrika, ex coll. Dr. O. Staudinger, ist ein grosses Stück der *distincta* Rbr. und muss ebenfalls als ein Synonym zu dieser Art gezogen werden.

Acanthaclisis dasymalla G. Stett. ent. Zeit. XXIV, p. 174 (1863), ist nach einem ♀ aus Lindi, ex coll. Staudinger, (cfr. G. XXV, p. 118, 1893) eine mit *distincta* verwandte, aber deutlich verschiedene Art.

Acanthaclisis conspurcata G. XVI, p. 88 (1885). — Diese australische Art ist vollkommen identisch mit Exemplaren der sehr variablen *A. fundata* (Wlk.). Die Farbe des Abdomens kann ganz schwarz sein, oder, je nach der Erhaltung, lichtere gelbe Längsflecken aufweisen. Auch die Färbung der Beine und Flügel ist sehr variabel. Es kommen Exemplare mit braun gefleckten Vorderflügeln vor. Die Typen sind aus Bowen und Rockhampton, beide vom Godeffroy Museum in Hamburg gekauft. Das Exemplar aus Rockhampton hat gefleckte Vorderflügel. Ich besitze in meiner Sammlung eine neue australische Art, welche mit dieser verwandt ist und die ich von Mac Lachlan als *conspurcata* G. erhielt. Sie wird bei einer anderen Gelegenheit beschrieben werden.

Acanthaclisis inquinata G. XVI, p. 11 (1884). — Die Type ist ein ♀ vom Congo, ex. coll. Dr. O. Staudinger, das sehr dunkel gefärbt ist, und ausser der discalen dunklen Schräglinie noch einige grössere, dunkle Längsflecken, dem Hinterrande parallel verlaufend, in den Vorderflügeln aufweist. Sie gehört zu der folgenden Art.

Acanthaclisis? debilis G. XIX, p. 100 (1888). — Die Typen sind 2 ♂♂ aus Lagos, Kricheldorff, und wurden von G. als unsicher zu *Acanthaclisis* gehörend, beschrieben. Die Exemplare sind völlig identisch mit *A. longicornis* Rambur, welche durch ganz Afrika verbreitet ist und von welcher Art ich später in Brüssel die Type untersucht habe [cfr. Bull. scient. France Belg. XLI, p. 266 (1907)]. Kolbe (Deutsch Ost-Afrika, IV, Neur. pp. 15 und 16, 1897) bringt sie in seine Gattung *Syngenes*. Die vollständige Synonymie ist also:

A. longicornis Rbr. = *longicornis* var. Wlk. = *inquinata* G. ♀ = *debilis* G. ♂.

Cymothales, XXV, p. 127 (1893). — Diese Gattung ist eine sehr natürliche und die hierzu gebrachten Arten gehören zu den schönsten Myrmeleoniden. G. hat zwei Arten beschrieben, die beide sehr gut kenntlich sind.

C. mirabilis G. XXV, p. 128 (1893). — Die Type ist ein ♀ aus Kamerun, ex. coll. Staudinger. Ich sah mehrere Exemplare vom Congo und West-Afrika. Die von mir beschriebene *C. bouvieri*, Bull. scient. France Belg. XLI, p. 267, pl. IX, f. 10 (1907), ist die insuläre Form dieser Art, welche bis jetzt noch nicht aus Ost-Afrika bekannt wurde.

C. dulcis G. XXV, p. 130 (1893) ist ebenso wie die vorige eine gute Art; die Type ist ein ♀ aus Lindi, Ost-Afrika, ex. coll. Dr. O. Staudinger. Sie ist verwandt mit *C. speciosus* Kolbe.

In derselben Sammlung ist auch noch ein unbestimmtes Exemplar des *Myrmeleon insignis* Rambur, Névropt. p. 388,

pl. 11, fig. 2 (1842). Es stimmt genau mit der Beschreibung und Figur der Type überein und es unterliegt keinem Zweifel, dass hier wohl dieselbe Art vorliegt. Das Exemplar stammt aus Brasilien, Bahia, ex coll. H. Fruhstorfer, sodass hiermit die Localität der Art bekannt geworden ist. G. hat Rambur's Art als fraglich in seine australische Gattung *Episalus* untergebracht, XVI, p. 19 (1884), er hat das betreffende Exemplar dazumal sicher nicht gekannt, weil es durch die schlanken, langen Beine mit langen, geraden Schiensporen mehr an die Gattung *Cymothales* erinnert. Sehr wahrscheinlich muss für diese Art eine neue Gattung errichtet werden.

Leiden, 24. März 1908.

NOTE VIII.

ZUR VERFERTIGUNG DER GESPINNSTNESTER VON
POLYRHACHIS BICOLOR SM. AUF JAVA

VON

EDW. JACOBSON,

mitgeteilt von E. WASMANN S. J.,

mit einem Anhang über das Nest von *Polyrhachis laboriosa* Sm. vom Congo.

(Mit Tafel 6).

In dem Bande XXV (1905), Note IX (pp. 133—140), teilte ich einen Brief von Herrn Edw. Jacobson über das Spinnvermögen von *Polyrhachis dives* Sm. (Java) mit. Seither hat Doflein im Biolog. Centralblatt, 1905, N^o. 15 (S. 497—507) interessante Detailbeobachtungen darüber geboten, wie *Oecophylla smaragdina* F. auf Ceylon die zerrissenen Gespinnstnester mittelst ihrer Larven wieder zusammenspinnt, die sie dabei als „Spinnrädchen“ gebraucht. Dadurch sind Ridley's und Holland's ältere Beobachtungen für diese Ameise vollauf bestätigt worden. Ueber dasselbe Verfahren bei der australischen „grünen Baumameise“ (*Oecophylla virescens* F.) berichtete Dodd ¹⁾ aus Australien schon 1902. Genau so verfährt auch die afrikanische *Oecophylla longinoda* Ltr. nach den Beobachtungen von P. H. Kohl ²⁾, Missionar

1) Notes on the Queensland green ant (Victoria Natural. XVIII, pp. 136—140).

2) Zur Biologie der spinnenden Ameisen (Natur u. Offenbarung, 1906, S. 166—169). — Auf *Oecophylla longinoda* beziehen sich auch die in K. Chun's Reisewerk „Aus den Tiefen des Weltmeeres“, 2. Aufl. (1903) S. 129 erwähnten anatomischen Untersuchungen über die Spinnröhren der Larven von *Oecophylla*.

am oberen Congo. Ein Teil der Ameisen zieht die Ränder der auseinandergerissenen Blätter des Gespinnstnestes mit ihren Beinen und Mandibeln wieder zusammen, worauf andere Arbeiterinnen mit je einer Larve im Maule erscheinen und die Blätter durch die aus dem Munde der Larve tretenden Gespinnstfäden wieder verbinden. Nach Dr. E. Göldi's Beobachtungen in Parà ¹⁾ verfertigt der amerikanische *Camponotus senex* Sm. seine Gespinnstnester auf dieselbe Weise mittelst der Larven. Karawaiew ²⁾ untersuchte 1906 die Spinndrüsen der Larven von *Polyrhachis Mülleri* auf Java und äusserte die Vermutung, dass auch sie mittelst ihrer Larven Gespinnstnester verfertige.

Im Juli 1907 sandte mir Herr Edw. Jacobson das auf einem Palmenblatte angelegte Gespinnstnest einer *Polyrhachis* aus Batavia zu, sammt den Ameisen, die ich als *Polyrhachis bicolor* Sm. bestimmte. Die Beobachtungen, die Herr Jacobson in seinem Briefe beifügte, gebe ich hier mit nur wenigen Kürzungen wieder:

„Es scheint, dass die Zunft der Weber unter den tropischen Ameisen zahlreiche Mitglieder zählt. Um so mehr muss es Wunder nehmen, dass die Beobachtungen über spinnende Ameisen erst aus den letzten 17 Jahren stammen. Als Arten, welche die Webekunst ausüben, sind bis jetzt bekannt: *Oecophylla smaragdina*, *O. virescens*, *O. longinoda* ³⁾, *Camponotus senex*, *Polyrhachis dives*. Ich kann Ihnen schon wieder eine interessante Mitteilung machen über Ameisen, welche mittels ihrer Larven spinnen, wie ich selbst beobachtet habe, und von welchen ich Ihnen das Material heute zuschicke.

„Ich fand das Nest in meinem Garten bei Batavia (17. Juli 1907). Die Ameise selbst (*Polyrhachis bicolor*) habe

1) A. Forel, Einige biologische Beobachtungen des Herrn Prof. Dr. E Göldi an brasilianischen Ameisen (Biolog. Centralbl. 1905, No. 6, S. 170 ff.).

2) Systematisch-biologisches über drei Ameisen aus Buitenzorg (Ztsch. f. wiss. Insektenbiol. 1906, Heft 12, S. 369—376).

3) Diese Art wird von Jacobson nur vermutungsweise als Spinnerin bezeichnet, da ihm P. Kohl's obenerwähnte Beobachtungen unbekannt waren.

ich schon früher in Semarang angetroffen, doch ein Nest war mir noch nicht vorgekommen.

„Dieses Nest (vgl. Fig. 1) war dadurch gebildet, dass bei einem gefiederten Palmenblatt einer der langen schmalen Blatteile auf eine Länge von ca 25 cm. nach unten umgebogen und mit einem sehr dünnen, durchsichtigen Gespinnst zugesponnen war. Das Blatt bildete also eine (nach unten offene) Rinne, wovon der offene Teil mit einem straff gespannten Gespinnst geschlossen war. Das Nest bildete nur einen Raum und hatte auch nur einen Eingang, welches am einen Ende nahe der Basis des Blattes (d. h. der betreffenden Blattfieder) sich befand (bei x). Deutlich konnte ich wahrnehmen, wie die Arbeiterinnen mit den Larven zwischen den Kiefern in der bekannten Weise an dem Gewebe hin und herfuhrten.

„Diese Ameise ist gar nicht kampflustig. Selbst wenn man sie ergreift, macht sie gar keinen Versuch, sich mit ihren Kiefern zu wehren. Diese Art kommt mir träge vor.

„Bei der Untersuchung des Nestes stellte sich heraus, dass dasselbe 1 geflügeltes Weibchen, 25 Männchen und 24 Arbeiterinnen, eine Anzahl Puppen und ferner Larven in allen Altersstufen enthielt ¹⁾. Die Zahl der zur Kolonie gehörigen Arbeiterinnen muss natürlich grösser gewesen sein, da ein Teil derselben abwesend war, als das Nest weggeholt wurde. Einige der Arbeiterinnen sind etwas kleiner, aber es finden sich viel geringere Grössenunterschiede vor als bei *Oecophylla smaragdina*. Die Puppen sind in einem weissen Cocon eingesponnen. Ich schicke Ihnen die ganze Gesellschaft zu, nebst dem Nest und einem Fläschchen mit Larven und Cocons.

„Das Nest habe ich mittelst Bambusstäbchen ausgespannt, da das Blatt sich sonst zusammenrollt. Die Nestöffnung befindet sich am unteren Ende. Als ich Naphthalin auf das Nest streute, um die Bewohner herauszutreiben,

1) Die Königin muss Herrn Jacobson entgangen sein. Vielleicht befand sie sich in einem anderen Blattnest derselben Kolonie auf der nämlichen Palme?

rissen sie auch an anderen Stellen Löcher in das zarte Gewebe, um schneller entfliehen zu können. Auf demselben Blatt, nach der Spitze zu, befand sich auch ein Gespinnst mit der Puppe eines Schmetterlings."

Auf der Abbildung (Fig. 1) sieht man das Nest in oben und unten ausgespannter Stellung, um das äusserst feine Gespinnst sichtbar zu machen, das die zusammengebogene Blattfieder auf eine Länge von ca 25 cm. ausfüllte. Das Gespinnst gleicht einem äusserst feinen Spinnweb und enthält keine gröberen Beimengungen, weshalb es auf der Abbildung nur durch seine obere und untere Grenze angegeben ist; der Eingang befand sich bei x.

ANHANG.

Beschreibung des Gespinnstnestes von *Polyrhachis laboriosa* Sm.

Das Nest wurde von Herrn E. Luja bei Sankuru am unteren Congo 1904 gefunden und befindet sich im Naturhist. Museum von Luxemburg, dessen Conservator, Herr V. Ferrant, es mir zur Beschreibung übergab. Die photographische Abbildung desselben siehe Fig. 2.

Das Nest misst 16 cm. Länge, 8 cm. Breite und 4,8—5 cm. Dicke, besteht aus drei zusammengebogenen Blättern und ist aus einem dichten Gespinnst gebildet, das die Blätter grossenteils bis auf die Stiele überzieht und sie ringsum zusammenhält. In das äussere Gespinnst sind zahlreiche dünne Holzfasern und teilweise auch Holzmulm verwebt. Am oberen und unteren Ende finden sich mehrere Löcher, die als Eingänge in das zwischen den Blättern befindliche Nestinnere dienen. Die grösste Dicke zeigt die Gespinnstschicht auf der Oberseite des Nestes, welche auf der Photographie (Fig. 2) mit drei darauf sitzenden Arbeiterinnen von *Polyrhachis laboriosa* (a) wiedergegeben ist.

Die Farbe des mit den Fasern und den feinen Mulmpartikelchen vermengten Gewebes ist in Folge der letzteren Beimengungen gelblichgrau. Unter der Lupe zeigt sich, dass

die Gespinnstfäden, welche das eigentliche Gerüst jenes Gewebes bilden, sehr fein, rein weiss, zahlreich sich durchkreuzend sind, ohne Beimengung einer Kittsubstanz. Daher bildet das Nest trotz jener fremden Beimengungen zum Gewebe ein wirkliches Gespinnstnest, kein Cartonnest. Es fühlt sich auch an den mit Mulm und Holzfasern durchsetzten Partien so weich an wie Watte, während die Cartonester durch Erhärtung des Drüsenkitts eine papierähnliche, härtere Oberfläche besitzen. Nur an dem unteren und oberen Ende des Nestes zeigen sich die Ausläufer des Gewebes auf der Blattfläche festgeklebt.

Dagegen hat Prof. G. Mayr ¹⁾ ein Nest von *Polyrhachis laboriosa* aus Kamerun (Sjöstedt!) beschrieben, welches ein echtes Cartonnest zu sein scheint: „Die braune Oberfläche des Nestes hat fast das Aussehen wie verrotteter Rindermist und besteht aus gröberen und feineren, kreuz und quer verlaufenden langen Pflanzenfasern, welche mit einer leimartigen Kittsubstanz aneinandergekittet sind“ (S. 255).

Es scheint sonach, dass *Polyrhachis laboriosa* je nach den Umständen Gespinnst- oder Cartonester verfertigt. Oder sollte vielleicht das von Mayr beschriebene Nest auch ein Gespinnstnest gewesen sein?

Luxemburg, 8. April 1908.

1) Beiträge zur Kenntniss der Insektenfauna von Kamerun, V, Formiciden, gesammelt von Y. Sjöstedt (Entom. Tidskr. Arg. 17, H. 3 (1896), Stockholm, S. 255 u. Taf. IV, Fig. 3).

NOTE IX.

LASIODACTYLUS NITIDUS GROUV.
VAR. DU LASIODACTYLUS MACULOSUS OLLIFF
(COLEOPTERA : NITIDULIDAE)

PAR

A. GROUVELLE.

Je rapporte au *Lasiodactylus maculosus* Olliff (Notes Leyden Museum, VI, 1884, p. 74) sous le nom de variété *L. nitidus* Grouv., un nombre relativement considérable de Lasiodactyles provenant de Sumatra: Pajakombo. Ces insectes présentent la forme allongée du *L. maculosus*, la disposition des taches des élytres, etc., mais ils ont la ponctuation du prothorax plus serrée sur le disque. Chez le *L. maculosus* (ex. type du Musée de Leide) la ponctuation du prothorax devant l'écusson laisse entre les points des intervalles plus grands que les points, tandis que chez le *L. nitidus* cette ponctuation est uniformément très serrée.

L'exemplaire type du *L. maculosus* Olliff, qui m'a été obligeamment communiqué par Mr. C. Ritsema, n'est pas opaque comme l'indique la description d'Olliff; il serait brillant s'il était dégagé de l'enduit gommeux qui couvre si souvent les insectes du même genre. De plus, les taches des élytres ne sont pas symétriques, fait qui se produit bien souvent chez les Lasiodactyles.

Les tibias intermédiaires du mâle sont arqués, élargis à l'extrémité.

Collection Grouvelle et Musée de Leide.

Paris, 4 Avril 1908.

NOTE X.

ON MACRUOPSAR MAGNUS BREVICAUDA
nov. subspec.

FROM THE ISLAND OF MEFOOR

BY

Dr. E. D. VAN OORT.

In 1870 our traveller von Rosenberg sent to the Leyden Museum under the name of *Lamprotornis magnus* nov. spec. a fine series of skins of a new bird, collected by him in the year 1869 on the island of Mefoor (Noemfoor) and on the island of Soepiori (named by him Soëk) of the Schouten-islands. The series consisted of seven specimens collected in January and February on Mefoor and eleven specimens collected in March on Soepiori.

In 1871 Schlegel ¹⁾ described the bird under the name given by von Rosenberg and stated that this new species was killed on Soëk only. The habitat of the typical *M. magnus* is consequently Soepiori, notwithstanding von Rosenberg collected his first specimen, in which he was right to see a new species, on Mefoor.

We still possess only three specimens from Mefoor, the others seem to have been exchanged. These three specimens have a much shorter tail and also shorter wings than those from Soepiori. The same is the case with the two specimens from Mefoor, mentioned by Salvadori ²⁾, and as the seven

1) Observations zoologiques, IV (1871), Ned. Tijdschr. Dierk. IV, 1873, p. 18.

2) Orn. Pap. II, 1881, p. 459.

specimens from that island in the Tring-Museum ¹⁾, which most kindly have been placed at my disposal by the director, show as to the tail the same peculiarity, it seems, that the bird from Mefoor, is constantly differing by its shorter tail from that from the Schouten-islands, and I therefore separate that form under the name of

Macruopsar magnus brevicauda.

The tables below show the smaller dimension of wing and tail of this new subspecies, which in coloration does not differ from the typical *magnus*.

Macruopsar magnus (Schleg.).

Leyden Museum :

Cat. n ^o . 1, ♂, Soepiori, 14 March 1869, von Rosenberg coll.	wing	tail
	121	243 mm
Cat. n ^o . 2, ♀, Soepiori, 14 March 1869, von Rosenberg coll.	117	224 »
Cat. n ^o . 3, ♂, Soepiori, 18 March 1869, von Rosenberg coll.	122	243 »
Cat. n ^o . 4, ♀, Soepiori, 19 March 1869, von Rosenberg coll.	124	210 »
Cat. n ^o . 5, ♂, Soepiori, 20 March 1869, von Rosenberg coll.	115	190 »
Cat. n ^o . 6, ♀, Soepiori, 20 March 1869, von Rosenberg coll.	117	222 »
Cat. n ^o . 7, ♂, Soepiori, 23 March 1869, von Rosenberg coll.	121	188 »
Cat. n ^o . 8, ♀, Soepiori, 23 March 1869, von Rosenberg coll.	124	228 »
Cat. n ^o . 9, ♀, Soepiori, 28 March 1869, von Rosenberg coll.	121	213 »
Cat. n ^o . 10, ♀, Soepiori, 28 March 1869, von Rosenberg coll.	120	218 »

1) Nov. Zool. X, 1903, p. 116.

Tring Museum:		wing	tail
♀	Sowek (Soepiori), May 1875, Beccari coll.	121	222 mm.
♂	Korido » 9 May 1875, Beccari coll.	126	245 »
♂	» » » » » » »	128	232 »
♀	» » 13 » » » »	120	212 »
♂	» » 14—15 » » » »	127	257 »
♀	» » 15 » » » »	118	228 »
♂	Kordo » 1879 from A. A. Bruyn. .	120	250 »
♂	» » » » » » . .	123	195 »
♂	» » » » » » . .	120	205 »
♀	» » » » » » . .	121	220 »
♀	» » » » » » . .	117	205 »
♂	Korido » October 1896, Doherty coll.	122	215 »
♂	Biak (Wiak), » » » »	123	226 »

Macruopsar magnus brevicauda Oort.

Leyden Museum:

		wing	tail
Cat. n ^o . 1,	♀, Mefoor, 21 January 1869, von Rosenberg coll.	116	134 mm.
Cat. n ^o . 2,	♂, Mefoor, 30 January 1869, von Rosenberg coll.	120	142 »
Cat. n ^o . 3,	♂, Mefoor, 12 February 1869, von Rosenberg coll.	109	118 »

Tring Museum:

♂	Mefoor, June 1894, Doherty coll. . .	114	131 mm.
♂	» October 1894, » » . .	112	120 »
♀	» May 1897, » » . .	114	151 »
♂	» » » » » . .	122	180 »
♀	» » » » » . .	110	137 »
♂	» June » » » » . .	122	175 »
♂	» » » » » . .	120	180 »

The two specimens examined by Salvadori:

♀	Mefoor, 26—30 May 1875, Beccari coll.	—	145 »
♀	» » » » » »	—	120 »

There are in our collection also two specimens, which, in their measurements, agree with *M. m. brevicauda* and which are labelled, the one »Arfak, New Guinea”, the other one only »New Guinea”; both are purchased from G. A. Frank in 1879. If these localities are correct, then the bird of the mainland of New Guinea belongs to the shorttailed form.

These two specimens are unsexed and measure:

<i>M. m. brevicauda</i> , cat. n ^o . 4, Arfak, New	wing	tail
Guinea	118	135 mm.
<i>M. m. brevicauda</i> , cat. n ^o . 5, New Guinea,	116	177 »

In birds from Mefoor as well as in those from Soepiori the colour of the bill and feet is black, and of the iris brown, according to von Rosenberg. The native name on Mefoor is »Mansinemie” and on Soepiori »Mampoedaar”.

Leyden Museum, May 1908.

NOTE XI.

NOTES SUR LES IXODIDÉS

PAR

L. G. NEUMANN.

VII¹⁾.

(Avec 10 figures dans le texte).

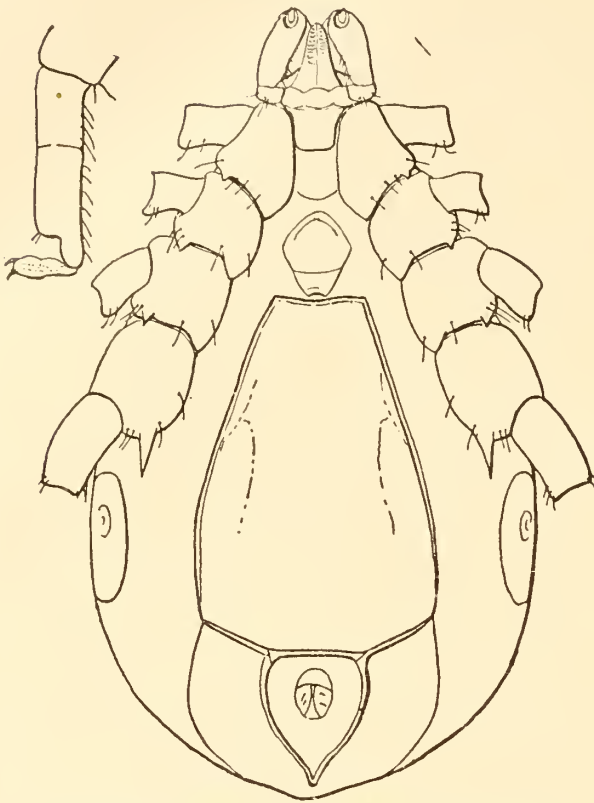
Ixodes cordifer, n. sp.

Mâle. — Corps ovale, deux fois aussi large en arrière qu'en avant, long de 3^{mm}.5 (rostre compris), large de 2^{mm}. (au niveau des stigmates). — *Ecusson dorsal* jaune brunâtre, brillant, un peu convexe, couvrant toute la face dorsale; sans festons postérieurs, à sillons cervicaux très courts et très superficiels, à ponctuations fines, nombreuses, plus fines et moins abondantes dans tout le tiers médian longitudinal, absentes dans deux excavations symétriques, longitudinales, sinueuses, qui occupent les deux tiers antérieurs, où elles sont limitées en dehors par une saillie linéaire, ébauche d'un sillon latéral. *Face ventrale* concave, à poils rares et très courts. Pore génital large, entre les hanches de la deuxième paire. *Ecusson pré-génital* trapézoïde, court, plus large que long; *écusson génito-anal* quadrangulaire, étroit en avant, bien plus long (1^{mm}.7) que large

1) Les „Notes” I à VI ont paru dans les Archives de Parasitologie, savoir: I, tome VI, 1902, pp. 109—128. — II, tome VIII, 1904, pp. 444—464. — III, tome IX, 1904, pp. 225—241. — IV, tome X, 1906, pp. 195—219. — V, tome XI, 1907, pp. 215—232. — VI, tome XII, 1908, pp. 1—27.

(1mm.1 au bord postérieur); écusson anal cordiforme, aussi large que long, à bord antérieur droit, à côtés convexes

Fig. 1.



Ixodes cordifer ♂. — Face ventrale.
En haut et à gauche, tarse de la 4^e paire.

et réunis en pointe en arrière, à punctuations fines; écussons adanaux deux fois aussi larges au bord postérieur qu'à l'antérieur, finement punctués et fusionnés derrière la pointe de l'écusson anal. Péritrèmes grands, ovales, bien plus longs que larges. — *Rostre* jaunâtre, court (0mm.6), à base dorsale pentagonale, aussi large que longue; les bords latéraux un peu divergents en avant, terminés par l'insertion

des palpes; le bord postérieur droit, sans angles saillants; pas de saillie ventrale en arrière de l'insertion des palpes. Chélicères? Hypostome court, large, à quatre files de dents arrondies. Palpes courts, larges; le premier article transversal, plus long que large; le deuxième et le troisième à suture obsolète, formant un ensemble rétréci à la base, et très large dans la plus grande partie de sa longueur du côté dorsal. — *Pattes* jaune sale, longues, fortes. Hanches larges, contiguës, avec quatre poils longs à leur bord postérieur, une épine à l'angle postérieur externe, croissant de I à IV, où elle est environ trois fois aussi longue que large; plus une épine plate, courte à I, II et III, diminuant de I à III. Tarses longs, sans saillie terminale, mais rétrécis brusquement à l'extrémité (en escalier); ongles longs, avec caroncule qui atteint presque leur pointe.

Femelle. — Inconnue.

D'après un mâle, recueilli à Sekroe (Nouvelle-Guinée), par S. Schädler. — Coll. du Musée d'hist. natur. à Leide.

Ixodes cordifer prend place dans le genre selon les indications du tableau suivant (mâles):

- | | | | |
|---|---|---|-----------------------|
| 1 | { | Palpes creux à leur face interne. — 2 | |
| | { | Palpes convexes à leur face interne. | |
| 2 | { | Ecusson anal à côtés divergents ou parallèles. | |
| | { | Ecusson anal à côtés convergents. — 3 | |
| 3 | { | Ecusson anal ouvert en arrière. — 4 | |
| | { | Ecusson anal fermé en arrière. — 6 | |
| 4 | { | Ecusson anal en fer à cheval. | <i>I. pilosus.</i> |
| | { | Ecusson anal terminé en pointe en arrière. — 5 | |
| 5 | { | Ecusson anal subcirculaire (en raquette). . . . | <i>I. ugandanus.</i> |
| | { | Ecusson anal subrectangulaire, plus long que large | <i>I. holocyclus.</i> |
| 6 | { | Ecusson anal cordiforme. Hanches IV à épine longue | <i>I. cordifer.</i> |
| | { | Ecusson anal circulaire. Hanches IV à épine très courte | <i>I. rarus.</i> |

Ixodes cordifer se rapproche plus, par sa forme générale, d'*Ixodes holocyclus* (qui est australien) que d'*I. rarus* (qui est africain).

Ixodes obscurus Nn.

J'ai décrit sous ce nom¹⁾ une femelle repue, recueillie à Funchal (Madère) par K. Kraepelin et faisant partie des collections du Musée de Hambourg. J'ai constaté dernièrement que ce nom a déjà été employé par Fabricius²⁾ pour une espèce de Cayenne, qui reste d'ailleurs purement nominale en raison de l'insuffisance de la description: »Statura depressa plana precedentium. Palpi subcompressi. Corpus supra obscure ferrugineum margine striato subtus abdomine albo.»

Je propose d'attribuer à l'espèce de Madère le nom d'*Ixodes nigricans*.

1) L. G. Neumann, Revision de la famille des Ixodidés. 3e mémoire. Mém. de la Soc. zoologique de France, XII, p. 121; 1899.

2) J. C. Fabricius, Systema antliatorum, p. 355; 1805.

Rhipicephalus cuneatus, n. sp.

Mâle. — Corps étroit, deux fois aussi large en arrière qu'en avant, arrondi en arrière, long de 4^{mm}.25 (rostre compris), large de 2^{mm}.3 en arrière du tiers postérieur. — *Écusson* peu convexe, brillant, brun marron, sans taches, un peu plus clair sur les festons postérieurs; couvrant tout l'abdomen; sillons cervicaux très courts, profonds, en forme de fossettes; sillons marginaux peu profonds, parfois presque obsolètes, commençant un peu en avant du milieu de la longueur et arrêtés au feston extrême; punctuations très nombreuses, moyennes, subégales; trois sillons courts et larges (le médian plus long) dans le quart postérieur; yeux plats, moyens, jaunâtres,

Fig. 2.

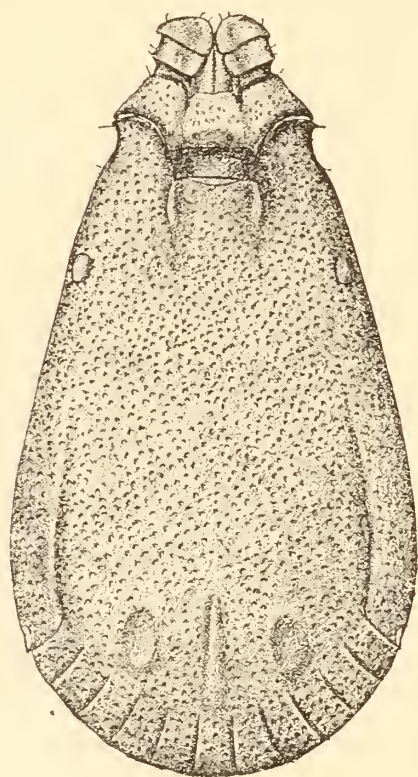
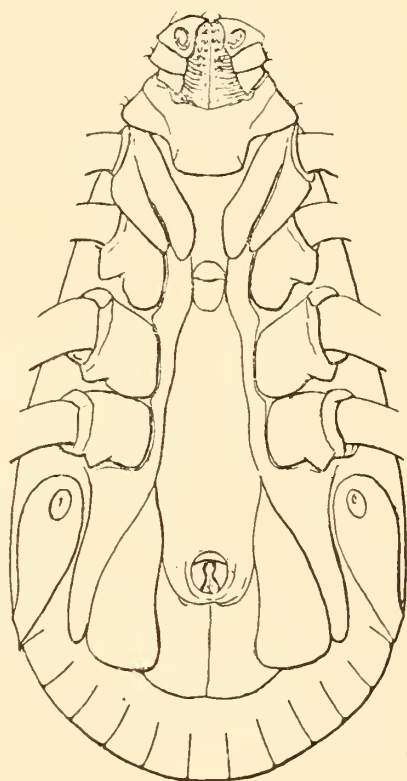
*Rhipicephalus cuneatus* ♂. —
Face dorsale.

Fig. 3.

*Rhipicephalus cuneatus* ♂. —
Face ventrale.

marginaux, situés un peu en avant du tiers antérieur de la longueur de l'écusson. *Face ventrale* brun rougeâtre, plus claire en arrière, peu ponctuée, à poils rares. Anus vers le tiers antérieur des écussons adanoux; ceux-ci triangulaires,

à bords postérieur et externe un peu convexes, l'interne un peu concave, punctuations nombreuses; écussons externes chitineux, bien formés; pas de prolongement caudal. Péri-trèmes étroits, allongés en virgule, à pointe recourbée vers la face dorsale. — *Rostre* long de 0^{mm}.65. Base dorsale environ deux fois aussi large que longue, ponctuée, les angles latéraux saillants vers le milieu de la longueur, les postérieurs saillants. Hypostome à 6 files de dents. Palpes bien plus courts que la base, à peine plus longs que larges, plats à la face dorsale; le deuxième article éloigné de la base du rostre, de même longueur que le troisième et rectangulaire à sa face dorsale. — *Pattes* fortes et longues, celles de la quatrième paire dépassant le bord postérieur du corps à partir du milieu de leur troisième article. Hanches I très fortes et longues, leur sommet antérieur non visible à la face dorsale, la lacune des deux épines très prolongée en avant; au bord postérieur des autres hanches, deux dents larges, plates et très courtes. Tarses moyens, à deux éperons terminaux successifs.

Femelle. — Inconnue.

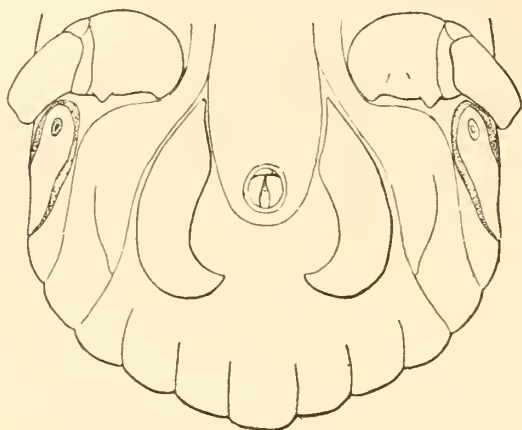
D'après 3 ♂♂ recueillis par M. Pelat, sur le Bœuf à Ngômo sur l'Ogooué (Congo français). — Collection du professeur Galli-Valerio (de Lausanne).

Rhipicephalus falcatus, n. sp.

Mâle. — Corps long de 4^{mm}.3 à 4^{mm}.85 (rostre compris), large de 2^{mm}.7 à 3^{mm}. (au niveau des stigmates). — *Ecusson* peu convexe, non brillant, brun foncé, glabre, sans taches, souvent débordé par l'abdomen à partir des yeux sous la forme d'une bande blanc jaunâtre; sillons cervicaux très courts, en fossettes allongées; sillons marginaux profonds, commençant un peu en arrière des yeux en faisant suite à une ligne plus interne et interrompue de grosses punctuations, et se terminant à la limite postérieure du pénultième feston; festons bien marqués; punctuations nombreuses, plus grandes et plus rapprochées dans le tiers postérieur,

presque absentes sur les festons et en dehors des sillons marginaux; pas d'autres sillons. Yeux moyens, plats, jaunâtres. *Face ventrale* blanc jaunâtre, glabre. Anus vers le milieu des écussons adanoux; ceux-ci en faucille, le bord interne très concave en arrière, le postérieur formant avec lui une pointe et se continuant en une courbe convexe régulière avec l'externe; écussons externes à peine ou non

Fig. 4.



Rhipicephalus falcatus ♂. —
Face ventrale de l'extrémité postérieure.

chitineux à leur pointe. Festons bien marqués, avec une tache foncée le long de leur bord libre, le médian souvent plus saillant, ses deux voisins saillants aussi quelquefois, mais moins que le médian. Péritères grands, étroits, en virgule longue, à fond blanchâtre. — *Rostre* long de 0mm.8 à 0mm.95. Base dorsale plus large que longue ($\frac{3}{2}$), les angles latéraux vers le tiers antérieur, les postérieurs peu saillants. Hypostome à six files de dents. Palpes un peu plus longs que larges, plats à la face dorsale, le 2^e et le 3^e articles à peu près de même longueur, le bord postérieur du 2^e atténué en pointe large et un peu éloigné du bord de la base. — *Pattes* fortes. Hanches I à sommet non ou à peine visible à la face dorsale, deux épines fortes, l'interne deux fois aussi large que l'externe; hanches II, III et IV allongées en travers, avec une petite épine près de l'angle externe, plus une interne large, formée par l'angle de IV. Tarses relativement faibles, à deux éperons terminaux, à caroncule grande.

Femelle. — Corps ovale, long de 4 à 6mm. (rostre compris), large de 2 à 3mm. (au niveau des stigmates), brun foncé. — *Écusson* brun, peu brillant, aussi large que long (2mm.), à bord postoculaire un peu sinueux; yeux vers le milieu de la longueur, plats, étroits; sillons cervicaux peu

profonds à leur origine, puis larges et très superficiels, visibles jusque vers le milieu de la longueur de l'écusson; sillons latéraux très nets, limités en dehors par un relief jusqu'au bord postérieur; ponctuations nombreuses, moyennes, subégales, absentes le long du bord cervical, du bord postérieur et presque absentes sur la marge préoculaire. *Face dorsale* avec festons, et sillon latéral s'unissant le plus souvent à son congénère en avant des festons; sillons longitudinaux ordinaires; ponctuations nombreuses, larges et superficielles, sur toute la face, absentes en dehors des sillons marginaux; des poils blanchâtres, courts, spiniformes, répartis surtout en files dans les sillons et sur les ponctuations. *Face ventrale* glabre, à festons très nets, deux fois aussi longs que larges. Pérित्रèmes en virgule courte, d'ailleurs semblables à ceux du ♂. — *Rostre* à base dorsale au moins deux fois aussi large que longue, les angles latéraux saillants, les postérieurs à peine saillants; aires poreuses ovales, plus longues que larges, parallèles, leur écartement égal à leur longueur. Palpes bien plus longs que larges, d'ailleurs semblables à ceux du ♂, ainsi que l'hypostome. — *Pattes* plus grêles.

D'après 3 ♂♂ et 8 ♀♀ recueillis au Nord du Lac Nyassa, par le Dr Old (British Museum); 4 ♂♂ et 1 ♀, recueillis en Liberia par F. X. Stampfli (Muséum de Leide).

Rhipicephalus supertritus Nn.

J'ai décrit cette espèce¹⁾ d'après 2 ♂♂ repus, pris sur les rives du Lualaba dans l'Etat libre du Congo (British Museum). Je l'ai fait entrer dans les tableaux dichotomiques de détermination en tenant compte des trois prolongements postérieurs qu'ils offraient. J'ai eu depuis, entre les mains 10 ♂♂ et 9 ♀♀ recueillis au bord du lac Nyassa par le Dr Old (British Museum). Les ♂♂ appartiennent évidem-

1) L. G. Neumann, Notes sur les Ixodidés, V. Archives de Parasitologie, XI, p. 216; 1907.

ment à la même espèce que ceux du Lualaba; ils en ont tous les caractères essentiels, ceux qui ne sont pas ou sont à peine modifiés par l'âge. Mais ils sont plus jeunes, de taille variée et ne présentent pas le débordement latéral de l'abdomen ni les trois prolongements postérieurs, qui sont évidemment un effet de la réplétion. Il me paraît donc utile de revenir sur la description de cette espèce et de compléter, en ce qui la concerne, les tableaux dichotomiques. D'autre part, les 9 ♀♀ qui, dans ce lot, accompagnaient les 10 ♂♂ appartiennent bien à la même espèce, comme le prouvent surtout les deux dépressions angulaires comprises entre les sillons cervicaux et les sillons latéraux de l'écusson dorsal; celui-ci représente bien la partie antérieure correspondante de l'écusson du ♂. La connaissance de l'espèce se trouve ainsi complétée.

Elle me paraît d'ailleurs se confondre avec *Rhipicephalus coriaceus* Nuttall & Warburton¹⁾.

Mâle. — Corps long de 3^{mm}.6 à 4^{mm}.5 (rostre compris), large de 2^{mm}.15 à 2^{mm}.9 (au niveau des stigmates). — *Ecusson* peu convexe, non brillant, brun foncé, sans taches, revêtu de poils blancs et écartés, surtout à la périphérie, couvrant tout l'abdomen; sillons cervicaux très larges, embrassant chacun une dépression triangulaire limitée en avant et en dehors par une crête qui se prolonge (par des ponctuations chez les jeunes) jusque un peu en arrière des yeux de manière à presque rejoindre en dehors le sillon marginal correspondant; celui-ci profond, large, commençant près des yeux, terminé à la limite postérieure du feston extrême; festons bien marqués, plus longs que larges; ponctuations nombreuses, inégales, allongées, généralement grandes, plus rares à la périphérie, absentes dans les dépressions cervicales, dans sept sillons postérieurs, longitudinaux, irréguliers, ainsi que dans quelques petites surfaces éparses et

1) A. G. H. F. Nuttall et C. Warburton, On a new genus of Ixodoidea together with a description of eleven new species of ticks. Proceedings of the Cambridge Philosophical Society, XIV, Pt. 1V, p. 402, figs. 17-20; 1907.

irrégulières. Yeux plats, jaunâtres. *Face ventrale* brunâtre, à poils longs, épars. Écussons adanaux grands, subtriangulaires, le bord interne à peine concave, l'externe et le postérieur convexes; écussons externes chitineux, allongés, étroits. Festons bien marqués, chitineux, les trois médians précédés chacun d'une plaque moins chitineuse, supplémentaire. Pas de prolongement caudal. Pérित्रèmes grands, en virgule, à fond lactescent. — *Rostre* long de 0^{mm}.85 à 0^{mm}.9. Base dorsale un peu plus longue que large, les angles latéraux vers le tiers antérieur, peu saillants et hérissés de poils, les postérieurs bien saillants; une ligne irrégulière de ponctuations en avant du bord postérieur. Hypostome à six files de dents. Palpes à peine plus longs que larges, plats à la face dorsale, le 2^e et le 3^e articles de même longueur, le bord postérieur du 2^e un peu éloigné du bord de la base. — *Pattes* fortes, brun rouge. Hanches I dirigées obliquement en dedans, à sommet bien visible par la face dorsale, à épines fortes, l'interne plus longue que l'externe; hanches II, III et IV allongées en travers, revêtues de quelques poils longs; une dent large et plate près de l'angle externe de II et de III; deux dents semblables à IV. Des poils longs au bord ventral de tous les articles, moins longs et plus rares au bord dorsal. Tarses relativement très grêles, à deux éperons terminaux, à caroncule grande.

Femelle. — Corps ovale, long de 4^{mm} (rostre compris), large de 2^{mm}.15 (au niveau des stigmates), brun foncé. — *Écusson* brun foncé, peu brillant, aussi large que long (1^{mm}.6), le bord postoculaire sinueux-anguleux; de longs poils blancs, épars, surtout à la périphérie; yeux vers le milieu de la longueur, plats, étroits; sillons cervicaux prolongés jusque vers le milieu de l'écusson, réunis à leur origine avec les sillons latéraux, qui atteignent le bord postérieur et sont indiqués en dehors par un relief très net; ponctuations comme dans le ♂, disparaissant aussi dans les dépressions triangulaires situées entre les sillons cervicaux et les sillons latéraux. *Face dorsale* avec sillon latéral complet et festons; trois sillons postérieurs, dont un impair; un sillon sub-

parallèle au sillon latéral, dont il est rapproché, allant de l'origine de celui-ci au niveau du feston extrême; des ponctuations profondes et larges, sur et entre les cinq sillons, en lignes; des poils blanchâtres et longs surtout à la périphérie. *Face ventrale* revêtue de poils courts, à festons nets. Pérित्रèmes en virgule courte. — *Rostre* à base dorsale au moins deux fois aussi large que longue, les angles latéraux saillants, en avant du milieu de la longueur, les postérieurs un peu saillants; aires poreuses petites, ovales, à écartement double de leur petit diamètre, tangentes en dehors à une faible crête longitudinale. Hypostome et palpes semblables à ceux du ♂. — *Pattes* aussi longues, bien plus grêles.

D'après 10 ♂♂ et 9 ♀♀ recueillis au Nord du lac Nyassa, par le Dr. Old. — British Museum.

Rhipicephalus cuneatus, *R. falcatus* et *R. supertritus* seront déterminés par l'emploi des tableaux suivants:

Mâle.

- | | | |
|---|---|---|
| 1 | { | Yeux plats. — 2 |
| | { | Yeux hémisphériques, orbités. |
| 2 | { | Ecusson dorsal pourvu de sillons marginaux. — 3 |
| | { | Ecusson dorsal sans sillons marginaux. |
| 3 | { | Ecusson dorsal concolore, brun. — 4 |
| | { | Ecusson dorsal blanc et noir <i>R. pulchellus.</i> |
| 4 | { | Ecussons adanaux non prolongés en pointe (leur bord postérieur droit ou convexe). — 5 |
| | { | Ecussons adanaux prolongés en une ou deux pointes (leur bord postérieur concave). |
| 5 | { | Ecussons adanaux triangulaires ou subtriangulaires (leur bord interne droit ou peu concave). — 6 |
| | { | Ecussons adanaux en faucille (leur bord interne très concave, les bords externe et postérieur formant une seule courbe régulière). — 11 |
| 6 | { | Sillon marginal profond, long, commençant près des yeux. — 7 |
| | { | Sillon marginal superficiel, court, commençant vers le milieu de la longueur du corps. — 9 |
| 7 | { | Ecusson dorsal à ponctuations distantes, peu nombreuses ou manquant par places. |
| | { | Ecusson dorsal à ponctuations rapprochées, abondantes. — 8 |

Notes from the Leyden Museum, Vol. XXX.

- 8 { Ecusson dorsal à punctuations réparties sur toute la surface.
Ecusson dorsal à punctuations absentes dans les aires cervicales comprises entre chaque sillon latéral et cervical et dans cinq ou sept sillons longitudinaux *R. supertritus.*
- 9 { Bord postérieur du corps uni ou avec un prolongement caudal.—10
Bord postérieur avec trois prolongements . . . *R. aurantiacus.*
- 10 { Longueur du corps égale à presque une fois et demie la largeur. *R. Ziemanni.*
Longueur du corps presque double de la largeur. *R. cuneatus.*
- 11 { Ecusson dorsal glabre, à punctuations nombreuses, moyennes, rapprochées, occupant tout l'intervalle entre les sillons marginaux *R. falcatus.*
Ecusson dorsal à poils blanchâtres, à punctuations très grandes, espacées, manquant sur des îlots entre les sillons marginaux. *R. haemaphysaloides.*

Femelle.

- 1 { Yeux plats. — 2
Yeux hémisphériques, orbités.
- 2 { Ecusson dorsal brun ou brunâtre. — 3
Ecusson dorsal blanc.
- 3 { Ecusson dorsal en ovale allongé, plus long que large.
Ecusson dorsal en ovale court ou aussi large que long. — 4
- 4 { Ecusson dorsal à punctuations nombreuses. — 5
Ecusson dorsal à punctuations peu nombreuses (20 environ), grandes *R. cuspidatus.*
- 5 { Ecusson dorsal à punctuations subégales. — 6
Ecusson dorsal à punctuations très inégales (de très grandes et de très fines), distantes.
- 6 { Ecusson dorsal à punctuations grandes, rapprochées. — 7
Ecusson dorsal à punctuations fines. — 8
- 7 { Punctuations réparties régulièrement.
Punctuations absentes dans l'aire angulaire comprise entre le sillon cervical et le sillon latéral. *R. supertritus.*
- 8 { Punctuations plus rares ou absentes sur les bords. Base du rostre à bord postérieur concave, à angles postérieurs larges. — 9
Punctuations abondantes partout. Base du rostre à bord postérieur droit, à angles postérieurs aigus *R. aurantiacus.*
- 9 { Ecusson dorsal à sillons latéraux obsolètes. . . . *R. Ziemanni.*
Ecusson dorsal à sillons latéraux nets *R. falcatus.*

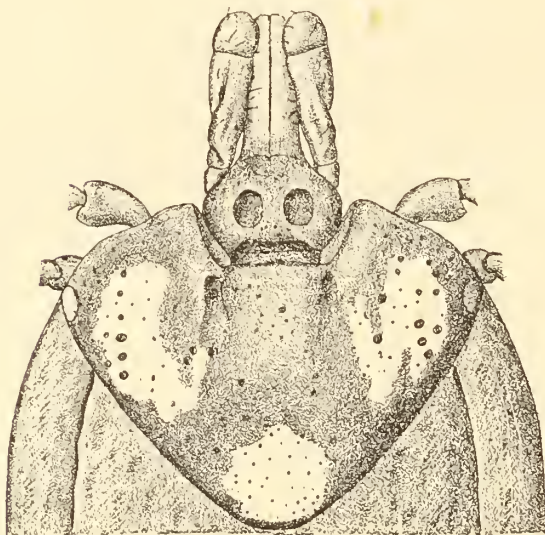
Notes from the Leyden Museum, Vol. XXX.

Amblyomma trimaculatum, n. sp.

Mâle. — Inconnu.

Femelle. — Corps en ovale court, long de 7^{mm}. (rostre compris), large de 4^{mm}.5 au niveau des stigmates, non renflé, brun jaunâtre. — *Écusson* triangulaire (les bords postérieurs droits, l'angle postérieur étroit), plus large (3^{mm}.4) que long (2^{mm}.6), brun marron (après séjour dans l'alcool), avec trois taches claires, jaune verdâtre, irrégulières: deux grandes, presque semi-lunaires dans les champs latéraux, et une médiane, plus petite, subrectangulaire dans l'angle postérieur. Sillons cervicaux profonds et courts. Ponctuations peu nombreuses, très fines sur la tache postérieure, manquant presque dans le reste du champ médian; une dizaine environ de grandes et un plus grand nombre de petites dans les champs latéraux. Yeux grands, plats, ovales, jaunâtres, situés entre la moitié et le tiers antérieur de la longueur. *Face dorsale* un peu convexe, glabre, à peine chagrinée, sans

Fig. 5.



Amblyomma trimaculatum ♀. —
Rostre et écusson dorsal.

ponctuations nettes, à sillon marginal profond, à festons bien marqués et plus longs que larges. *Face ventrale* revêtue de poils très fins et très courts dans sa région postanale, à sillons génitaux presque obsolètes, les sillons anal et ano-marginal bien apparents, ainsi que la séparation des festons. Pérित्रèmes très grands, à prolongement externe bien formé. — *Rostre*

long (2^{mm}.), étroit. Base deux fois au moins aussi large que longue, à côtés convexes, les angles postérieurs plats, un peu saillants; aires poreuses grandes, profondes, plus longues que larges, un peu divergentes en avant, leur moindre

écartement égal à leur petit diamètre. Hypostome un peu spatulé, armé de dents sur sa moitié antérieure: au sommet, qui est un peu émarginé, une surface recouverte de denticules petits, très nombreux, très rapprochés; puis huit files de dents, les deux files internes plus courtes et à dents moins fortes, les dix autres à 8—9 dents fortes. Chélicères? Palpes plats, élargis en avant; le premier article relativement long, en carène à sa face ventrale; le 2^e bossu, près de sa base à la face dorsale, deux fois aussi long que le 3^e; des poils longs sur les deux bords de la face interne. —

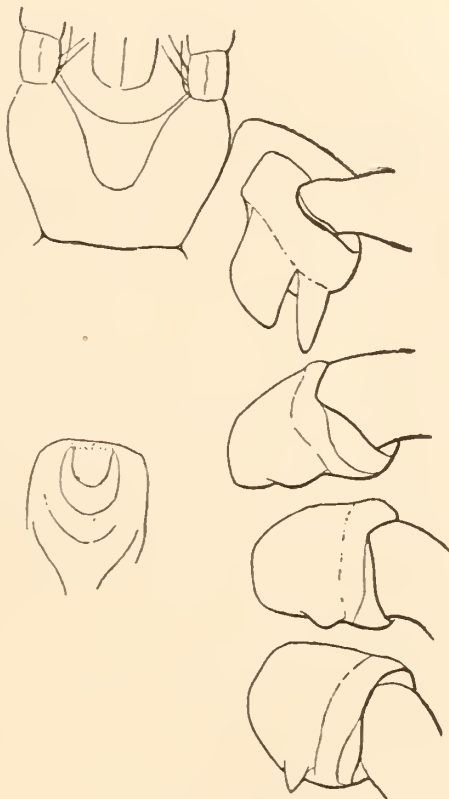
Fig. 6.



Amblyomma trimaculatum. — Péritrème droit.

Pattes longues, fortes, brun rougeâtre, à peine plus claires à l'extrémité distale des 3^e, 4^e et 5^e articles. Hanches I à deux épines: l'interne plate, aussi large que longue; l'externe aiguë, environ deux fois aussi longue que large; une seule épine aux autres hanches, courte, plate, bien plus large que longue à II et à III, aiguë et aussi longue que large à IV. Tarses moyens, terminés en escalier, avec deux forts épérons consécutifs; ambulacres atteignant environ la moitié de la longueur des ongles.

Fig. 7.



Amblyomma trimaculatum ♀. — Hanches.

D'après 1 ♀ recueillie à Robertsport (Liberia) par Demery.

— Collection du Musée d'histoire naturelle à Leide.

Amblyomma trimaculatum prend place parmi les *Amblyomma* ♀ d'Afrique selon les indications du tableau suivant:

- 1 } Yeux plats, non saillants. — 2
- } Yeux hémisphériques, orbités.

- 2 { Ecusson dorsal concolore, subcordiforme. Tarses atténués en es-
calier *A. cuneatum*.
Ecusson dorsal marqué de taches. — 3
- 3 { Ecusson dorsal triangulaire (les bords postérieurs droits). — 4
Ecusson dorsal cordiforme ou subcordiforme (les bords postérieurs
convexes).
- 4 { Hypostome à huit files de dents. — 5
Hypostome à six files de dents.
- 5 { Ecusson dorsal à ponctuations peu nombreuses, la plupart fines;
trois grandes taches claires *A. trimaculatum*.
Ecusson dorsal à ponctuations nombreuses, profondes, la plupart
grandes; taches peu apparentes, diffuses.

A. trimaculatum ♀ est voisin d'*A. guianense*.

Amblyomma malayanum Nn.

Dans mes »Notes sur les Ixodidés, VI'', j'ai décrit cette espèce d'après un mâle et deux femelles, appartenant au British Museum et recueillis à Bukitima (Singapore).

Un caractère très distinctif de la femelle consiste en »une saillie lisse (sorte d'écusson supplémentaire), ovoïde, allongée transversalement, partagée en deux moitiés par une sorte de suture médiane, suivie d'un sillon qui va jusqu'au feston médian''; cette saillie est située à peu de distance en arrière de l'angle postérieur de l'écusson dorsal.

C'est ainsi que ce caractère se présentait dans les deux femelles qui ont servi à la description et qui étaient encore jeunes (8—9^{mm.}, rostre compris). Une autre femelle, recueillie (avec un mâle) sur une Tortue, par M. le Dr. H. E. Durham, dans la Péninsule malaise et communiquée par M. le professeur Nuttall (de Cambridge), mesure 12^{mm.} de longueur (rostre non compris) sur 10^{mm.} de largeur. Ici l'écusson supplémentaire, par suite de la dilatation du notagastre, s'est éloigné beaucoup de l'angle postérieur de l'écusson dorsal, dont il est séparé par une surface simplement striée, presque glabre, longue de 2^{mm.}5, large de 1^{mm.}5 et irrégulièrement quadrangulaire.

Dermacentor variegatus kamshadalus, n. subsp.

Mâle. — Corps rétréci en avant, près de deux fois aussi

large au quart postérieur (4^{mm.}) qu'au niveau des yeux, long de 7^{mm.} (rostre compris). — *Ecusson* peu convexe, recouvert d'une patine blanchâtre qui occupe toute sa surface et laisse seulement libres neuf taches longitudinales, étroites, dont une impaire dans le quart postérieur; le fond se montre encore aux fines ponctuations, à quelques ponctuations moyennes, aux plaques poreuses submédianes, aux séparations des festons, un peu dans le champ médian et

Fig. 8.

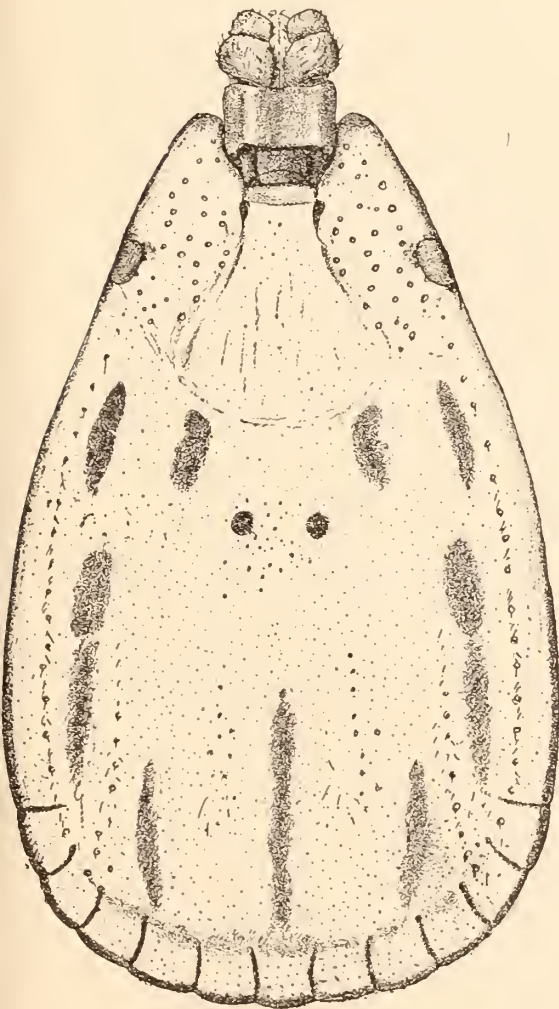
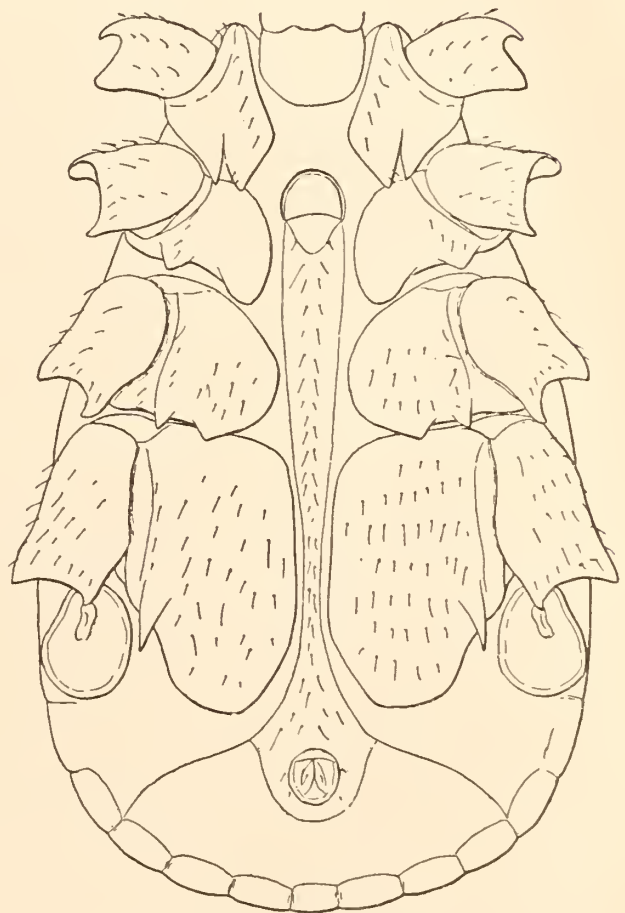


Fig. 9.



Dermacentor variegatus kamshadalus ♂. —
Face dorsale.

Dermacentor variegatus kamshadalus ♂. —
Face ventrale.

aux sillons cervicaux. Sillons cervicaux peu profonds, sauf à leur origine; pas de sillons marginaux; festons presque carrés; ponctuations pour la plupart très fines et superficielles; quelques-unes plus grandes et plus profondes en avant, en dehors du champ médian; des poils très courts, en lignes,

dans la moitié postérieure surtout. Yeux grands, marrons. *Face ventrale* brun rougeâtre; péritrèmes grands, à fond blanchâtre, à granulations nombreuses, bien visibles et sans prolongement rétro-dorsal. — *Rostre* court (0^{mm}.97), la base formant un peu plus de la moitié de la longueur, rectangulaire, bien plus large (0^{mm}.7) que longue, déprimée en son milieu, à angles postérieurs saillants. Hypostome à 6 files de dents, avec une bande nue au milieu. Palpes à peu près aussi larges que longs; le 2^e article plus large que long, plus long que le 3^e, sans épine dorsale; le 3^e deux fois aussi large que long. — *Pattes* très fortes, très épaisses. Hanches I à deux épines contiguës, deux fois aussi longues que larges, de même longueur, l'interne plus large; hanches II et III à deux épines plates, plus larges que longues, rapprochées à II, écartées à III; hanches IV très grandes, près de deux fois aussi longues que larges, avec une épine aiguë deux fois aussi longue que large, près de l'angle postérieur externe. Tarses très courts, petits, avec un fort éperon terminal.

Femelle. — Inconnue.

D'après un mâle, pris sur *Ovis* sp., au Kamshatka (coll. du Musée d'hist. nat. à Leide).

L'espèce prend la place suivante dans le tableau synoptique des *Dermacentor* mâles:

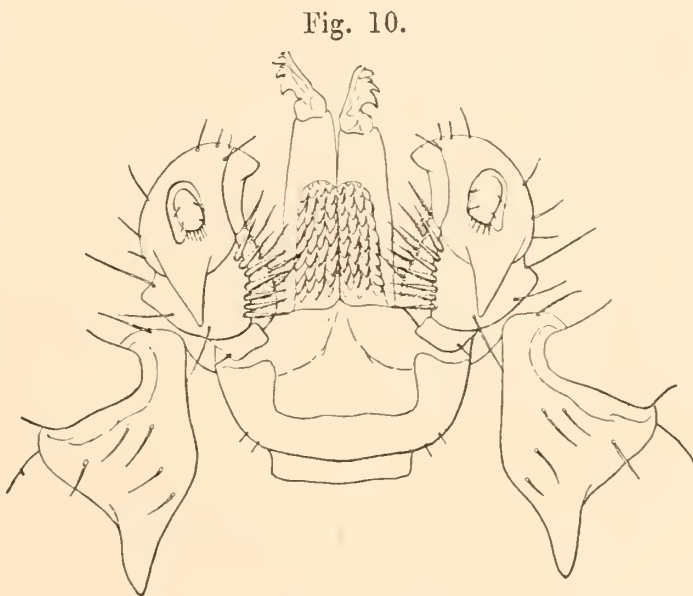
- | | | | |
|---|---|---|----------------------|
| 1 | { | Ecusson dorsal avec taches claires. — 2 | |
| | { | Ecusson dorsal brun foncé, sans taches | <i>D. nitens.</i> |
| 2 | { | Ecusson dorsal avec taches blanches. — 3 | |
| | { | Ecusson dorsal avec taches jaunes ou rouges (espèces africaines). | |
| 3 | { | Hanches IV avec une seule saillie au bord postérieur. — 4 | |
| | { | Hanches IV avec 2—3 petites épines au bord postérieur. | <i>D. compactus.</i> |
| 4 | { | 2 ^e article des palpes avec une épine dorsale rétrograde. <i>D. reticulatus.</i> | |
| | { | 2 ^e article des palpes sans épine. — 5 | |
| 5 | { | Péritrèmes à prolongement postéro-externe apparent. <i>D. Andersoni.</i> | |
| | { | Péritrèmes à prolongement postéro-externe nul ou rudimentaire. — 6 | |
| 6 | { | Péritrèmes paraissant lisses (à granulations très fines). <i>D. electus.</i> | |
| | { | Péritrèmes à granulations grandes, bien visibles. <i>D. variegatus.</i> | |

Notes from the Leyden Museum, Vol. XXX.

Haemaphysalis parva, n. sp.

Mâle. — Corps ovale, plus large vers le tiers postérieur, long de 1^{mm}.5 (rostre compris), large de 0^{mm}.9, jaune brunâtre. — *Ecusson* couvrant toute la face dorsale, glabre, à ponctuations nombreuses, fines, égales, réparties régulièrement; sillons cervicaux de longueur moyenne, peu profonds; sillons latéraux commençant au niveau de la 3^e paire de pattes et s'arrêtant à la limite antérieure du pénultième feston; festons près de deux fois aussi longs que larges, à séparations nettes. *Face ventrale* à peine et très finement ponctuée; pore génital en regard de l'angle antéro-interne des hanches II; péritrèmes subcirculaires. — *Rostre* long de 0^{mm}.38 (des angles postéro-dorsaux de la base au sommet des palpes). Base dorsale rectangulaire, près de deux fois aussi large que longue au milieu, presque aussi longue que large au niveau des angles postérieurs, qui sont très sail-

lants. Hypostome court, à huit files de dents. Palpes plus longs que larges; le deuxième article à angle externe un peu saillant, son bord interne pourvu, à la face ventrale, de sept soies gladiformes, barbelées et divergentes, et à la face dorsale de cinq



Haemaphysalis parva ♂. —
Rostre (face ventrale) et hanches I.

soies semblables; le troisième article un peu recourbé en dedans, par le côté dorsal du sommet, son bord postéro-ventral prolongé par une épine conique presque aussi longue que l'article précédent, le bord postéro-dorsal un peu saillant en dedans, sans épine. — *Pattes* relativement longues.

Hanches I pourvues d'une épine presque aussi forte que l'épine ventrale du 3^e article des palpes; à l'angle postéro-interne des autres hanches une épine courte, aussi large que longue. Tarses moyens, non bossus, à caroncule presque aussi longue que les ongles.

Femelle. — Corps ovale, brun rouge ou jaunâtre, long de 1^{mm}.9 (rostre compris), large de 1^{mm}.3; des festons postérieurs bien visibles. — *Ecusson* ovale, long de 0^{mm}.70, large de 0^{mm}.65, ponctué comme chez le ♂, un peu plus clair que le reste du corps; sillons cervicaux superficiels, ne dépassant guère la moitié de la longueur. *Face dorsale* et *ventrale* à peine ponctuées, glabres; pore génital petit, au niveau du deuxième intervalle coxal; péritrèmes comme chez le ♂. — *Rostre* long de 0^{mm}.33. Base dorsale plus de deux fois aussi large que longue, les angles postérieurs saillants; aires poreuses petites, peu visibles, très écartées. Hypostome à huit files de dents. Palpes comme chez le ♂, à huit soies barbelées au bord ventral interne du deuxième article. — *Pattes* de longueur moyenne; hanches et tarses comme chez le ♂.

D'après 16 ♂♂, 8 ♀♀, 3 nymphes et 7 larves, recueillis à Ceylan sur *Canis aureus* L. par le Dr. Marbel et communiqués par le professeur Galli-Valerio (de Lausanne).

Haemaphysalis parva sera déterminé par l'emploi des tableaux suivants:

Mâle.

- | | | |
|---|---|--|
| 1 | { | Palpes à 2 ^e article non saillant ou saillant en dehors vers son tiers postérieur. — 2 |
| | { | Palpes à 2 ^e article aigu en dehors par son bord postérieur. |
| 2 | { | Palpes à 3 ^e article non recourbé en dedans à son sommet. — 3 |
| | { | Palpes à 3 ^e article formant pince avec son congénère. <i>H. concinna</i> . |
| 3 | { | Hanche IV à épine aussi longue ou presque aussi longue que la hanche. <i>H. punctata</i> . |
| | { | Hanche IV à épine courte ou nulle. — 4 |
| | { | Palpes à 3 ^e article inerme <i>H. papuana</i> . |
| | { | Palpes à 3 ^e article pourvu de 1 ou 2 épines rétrogrades. — 5 |

Notes from the Leyden Museum, Vol. XXX.

- 5 { Ecusson dorsal sans sillon latéral. *H. birmaniae*
 { Ecusson dorsal pourvu d'un sillon latéral. — 6
- 6 { Hanches II, III & IV à une épine. — 7
 { Hanches II, III & IV inermes *H. aculeata.*
- 7 { 3^e article des palpes à une seule épine (ventrale) . *H. parva.*
 { 3^e article des palpes à 2 épines (ventrale et dorsale).

Femelle.

- 1 { Palpes à 2^e article non saillant ou saillant en dehors vers son
 tiers postérieur. — 2
 { Palpes à 2^e article aigu en dehors par son bord postérieur.
- 2 { Palpes à 3^e article pourvu d'une épine ventrale rétrograde. — 3
 { Palpes à 3^e article sans épine ventrale rétrograde.
- 3 { Palpes à 3^e article sans épine dorsale rétrograde. — 4
 { Palpes à 3^e article pourvu d'une épine dorsale rétrograde.
- 4 { Palpes à 2^e article arrondi en dehors. Hanches I & IV à épines
 égales *H. punctata.*
 { Palpes à 2^e article anguleux en dehors. Hanches I à épine lon-
 gue, hanches IV à épine très courte. — 5
- 5 { Hypostome à 8 files de dents *H. parva.*
 { Hypostome à 10 files de dents *H. concinna.*

Toulouse, Avril 1908.

NOTE XII.

ZWEI NEUE SERPHIDEN AUS JAVA

(Hymenoptera).

VON

Prof. Dr. J. J. KIEFFER.

Dicroteleia, n. g.

Diese neue Gattung unterscheidet sich von allen übrigen Scelioniden, durch die Stigmaticalis, welche aus der Subcostalis entspringt, so dass letztere gegabelt erscheint. Alle übrigen Merkmale wie bei *Oxyscelis*.

Dicroteleia rugosa, n. sp.

♂. Schwarz; Mandibeln, Scapus und Beine mit Ausnahme der Coxae, rötlichgelb. Kopf kaum breiter als lang, mit groben, Runzeln bildenden Punkten. Augen kahl, rund, dreimal so lang wie die Wangen, breiter als ihr Abstand voneinander. Hintere Ocellen die Augen fast berührend, vom Hinterrand des Kopfes weiter als voneinander entfernt. Stirn mit einer tiefen, glatten, glänzenden Grube, welche von den Antennen bis gegen die Augenmitte reicht, drei bis viermal so breit als ihr Abstand vom Augenrand ist und hinten allmählig verengt ist. Eine tiefe Furche verbindet die Basis der Augen mit den Mandibeln. Palpen sehr kurz, kaum vorstehend. Antennen 12-gliedrig; 1. Glied an beiden Enden schmaler, so lang wie die zwei folgenden Glieder zusammen; 2. Glied obkonisch, so lang wie das 4. aber schmaler; 3. fast doppelt so lang wie dick, die folgenden kaum länger

Notes from the Leyden Museum, Vol. XXX.

als dick; 3—12. walzenförmig, das 5. in der Mitte schwach zahnartig vorspringend. Pronotum von oben nicht sichtbar. Mesonotum fast flach, wenig breiter als lang, grob gerunzelt, mit zwei breiten durchlaufenden Parapsidenfurchen und einer durchlaufenden Mittellängsleiste; ausserdem noch mit einer Furche vor den Tegulae. Scutellum halbkreisförmig, mit dichten groben Punkten; der Hinterrand eingedrückt und mit groben gereihten Punkten. Mediansegment kurz und runzelig. Pleuren grob gerunzelt; Mesopleuren gestreift, unten glatt und glänzend; Propleure mit zwei bogigen zur vorderen Coxa konvergierenden Leisten, welche eine elliptische Stelle einschliessen. Flügel schwach gebräunt, ohne Basalis; Subcostalis vom Vorderrand sehr weit entfernt, wenig vor der Spitze eine schräge Stigmatalis abzweigend, welche am Ende knopfförmig erweitert ist; der Spitzenteil der Subcostalis ist breiter aber kürzer als die Stigmatalis und erreicht den Flügelrand; Marginalis und Postmarginalis fehlend. Abdomen die Flügel überragend, um die Hälfte länger als der übrige Körper, allmählich zu einem abgestutzten Kegel verschmälert, mit 6 Tergiten; die drei ersten Tergiten mit Längsleisten, Zwischenräume grob gerunzelt; die folgenden fein gestreift; 1. Tergit quer, etwas kürzer als das 2., welches so lang wie breit ist; 3. etwas länger als das 2.; die folgenden kurz, aber noch etwas länger als breit; 6. abgestutzt, an jeder Hinterecke mit einem winzigen Anhängsel. Sternite dicht punktirt und von einer Mittellängsleiste durchzogen. — Länge: 4,5 mm.

E. Jacobson, Batavia, Nov. 1907. — Type im Leid. Mus.

Spilomicrus cribratus, n. sp.

♂. Schwarz; Palpen, Trochantere, Tarsen und vordere Tibien bräunlichgelb; Beine braunschwarz; Kniee und die vier hinteren Tibien hellbraun. Kopf rundlich, überall mit dichten, groben, sich berührenden Punkten; Gesicht mit weniger groben Punkten. Maxillarpalpen mit wenigstens 3 vorstehenden Gliedern, deren 2. dreieckig und breitge-

drückt ist; Labialpalpen wenigstens 2-gliedrig. Augen mit langen Haaren. Antennen 13-gliedrig; 1. Glied proximal verschmälert, so lang wie die zwei folgenden zusammen; 2. glatt und glänzend wie das 1., und etwas länger als dick; 3.—13. matt, fein anliegend behaart, walzenrund, zweimal so lang wie dick; 4. ohne Ausrandung noch Zahn. Thorax glatt und glänzend. Pronotum von oben nicht sichtbar; Parapsidenfurchen durchlaufend, vorn stark divergierend. Scutellum etwas länger als breit, hinten abgestutzt, vorn mit zwei eirunden, durch eine Leiste getrennten Gruben, lateral mit einer furchenartigen Grube, Hinterrand mit gereihten Punkten. Mediansegment mit einer dreieckigen Lamelle. Pleuren glatt und glänzend, nur die Metapleuren matt und mit grauer Behaarung. Flügel schwach getrübt; Basalis vorhanden; Subcostalis der Costalis sehr genähert; Marginalis etwas vor der Mitte liegend, nicht länger als breit; Stigmatalis keilförmig, schräg und eine Verlängerung der Marginalis darstellend, am Ende mit einem kleinen, schrägen, rücklaufenden Ast. Hintere Tibien etwas über der Mitte plötzlich keulenförmig verdickt. Petiolus grau behaart, kaum dreimal so lang wie dick, grob gefurcht, überall gleich dick. Abdomen gestaltet wie üblich in dieser Gattung, etwas deprimirt und ohne Längsfurche. — Länge: 4 mm.

E. Jacobson, Batavia, Febr. 1908. — Type im Leid. Mus.

Bitsch, 18. Mai 1908.

NOTE XIII.

TWO NEW DERMAPTERA
IN THE COLLECTION OF THE LEYDEN MUSEUM

BY

MALCOLM BURR, B. A., F. E. S., F. L. S.

Pygidicrana piepersi, sp. n.

Sat gracilis; fulvo-rufa; tomentosa; pronotum subquadratum; scutellum amplum; elytra brevia; alae abortivae; tarsi breves, lati, segmentis tertio primoque aequae longis; segmentum penultimum ventrale angustum, acutum; forcipis branchia contigua, depressa, apice arcuata. ♂.

Long. corporis. 16.5 mm.

› forcipis 3. ›

Rather slender; general colour reddish testaceous, shaded with darker, entirely covered with a fine dense pale pubescence.

Antennae typical, tawny.

Head blackish, pubescent, rather flattened.

Pronotum somewhat narrower than the head, subrectangular, the sides parallel and corners rounded, longer than broad; reddish testaceous, the prozona shaded with fuscous.

Scutellum ample, as broad as the pronotum, nearly as deep as broad, with a median suture, reddish testaceous, pubescent.

Sternal plates yellowish; prosternum narrowed posteriorly, mesosternum convex, rounded; metasternum with lobe broadened and somewhat sinuate posteriorly.

Elytra narrow, dark orange yellow, hairy, cut away at the axillary angle, exposing the ample scutellum, lanceolate at the apex.

Wings present, as greyish yellow flaps, beneath the sides of the elytra.

Feet yellowish; the tarsi short and broad, the 1st and 3rd segments about equal.

Abdomen slender at the base, gradually widening apically, greyish brown, smooth and tomentose.

Last dorsal segment ample, longer than broad, blackish red, posterior margin incrassate and darkened, roundly convex, slightly sinuate at the apex itself.

Penultimate ventral segment narrow, long, subacute, with a median sulcus, the apex itself with a small shallow emargination.

Forceps with the branches depressed, triquetre, stout and contiguous, straight, tapering and hooked at the apex; the right branch more so than the left, the inner margin finely crenulate.

Hab. Western Java (M. C. Piepers, 1 ♂ in the Leyden Museum).

A member of the group containing *P. vitticollis* Stål, *P. modesta* Borm., *P. ophthalmica* Dohrn and *P. atriceps* Kirby, characterised by the abbreviated elytra, ample scutellum, subrectangular pronotum, lanceolate penultimate ventral segment of the ♂, contiguous forceps and short, broad tarsi.

It differs from all these species in coloration and pattern.

Labia myrmeca, sp. n.

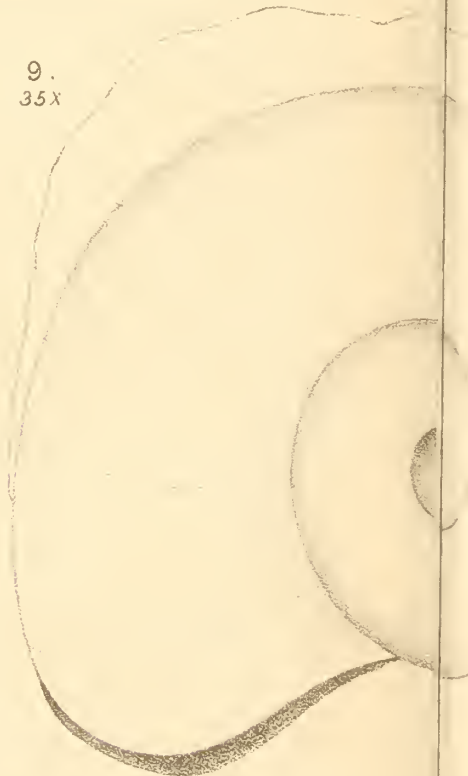
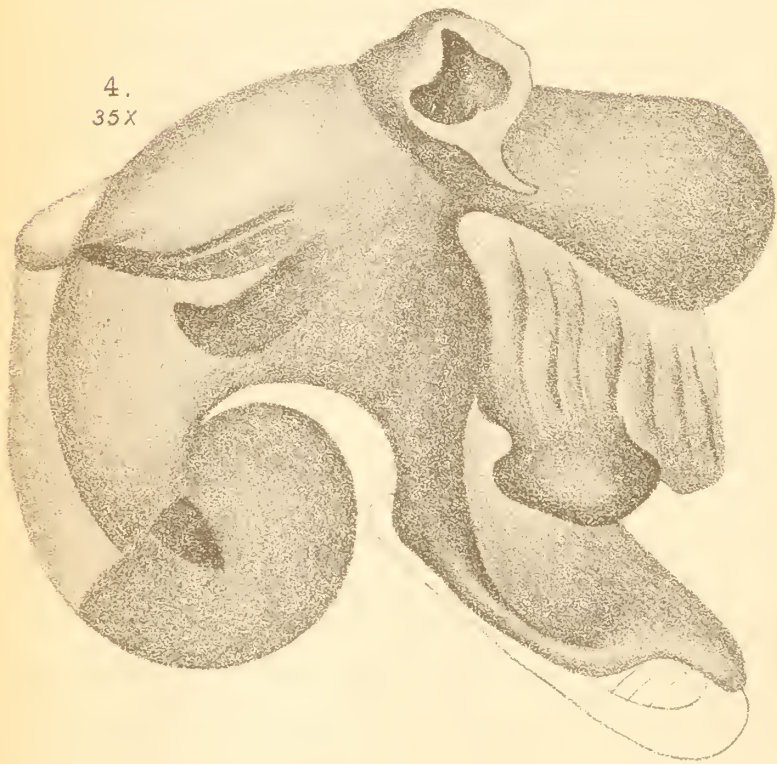
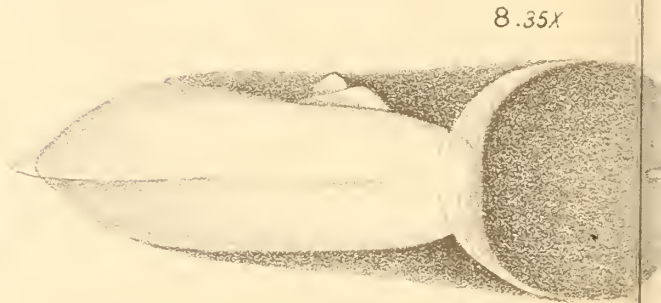
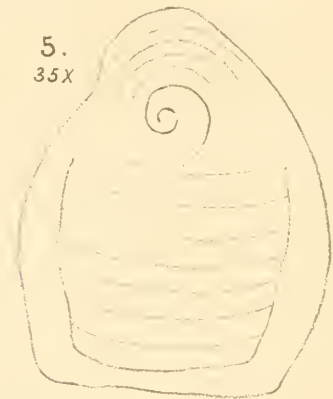
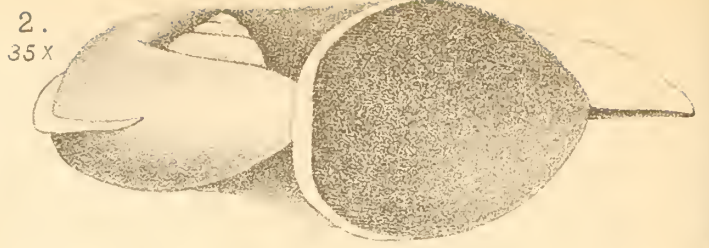
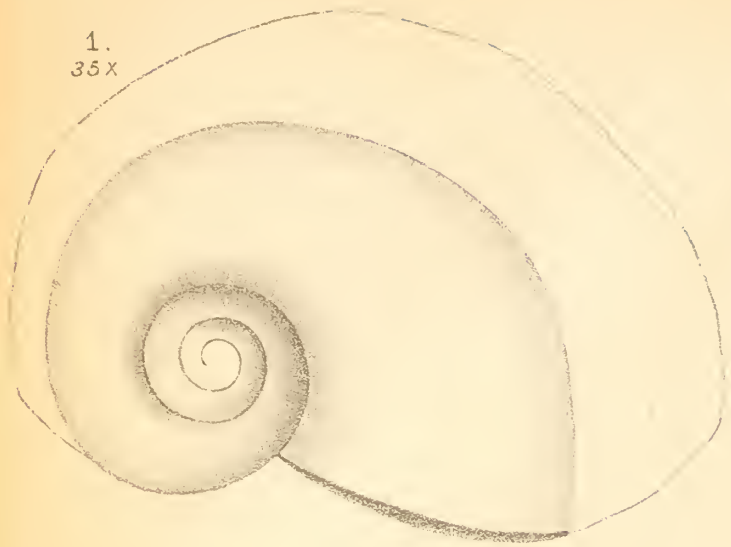
Minima; nigra, pronoto elytris que variegatis; caput magnum, tumidum. ♀.

Long. corporis	2.75 mm.
» forcipis	0.25 »

Exceedingly small; black, with variegated pronotum and elytra; strongly pubescent.

Antennae reddish brown, with 10 segments, 4th sub-cylindrical, decidedly shorter than 3rd, 5th almost equal to the third, the others gradually lengthening.

Head large, convex, tumid, shining black.



J. J. TESCH del.

Figs. 1—6. *Protatlanta souleyeti* Smith.
" 7—9. *Atlanta rosea* Souleyet (= *A. peroni* Lesue.)

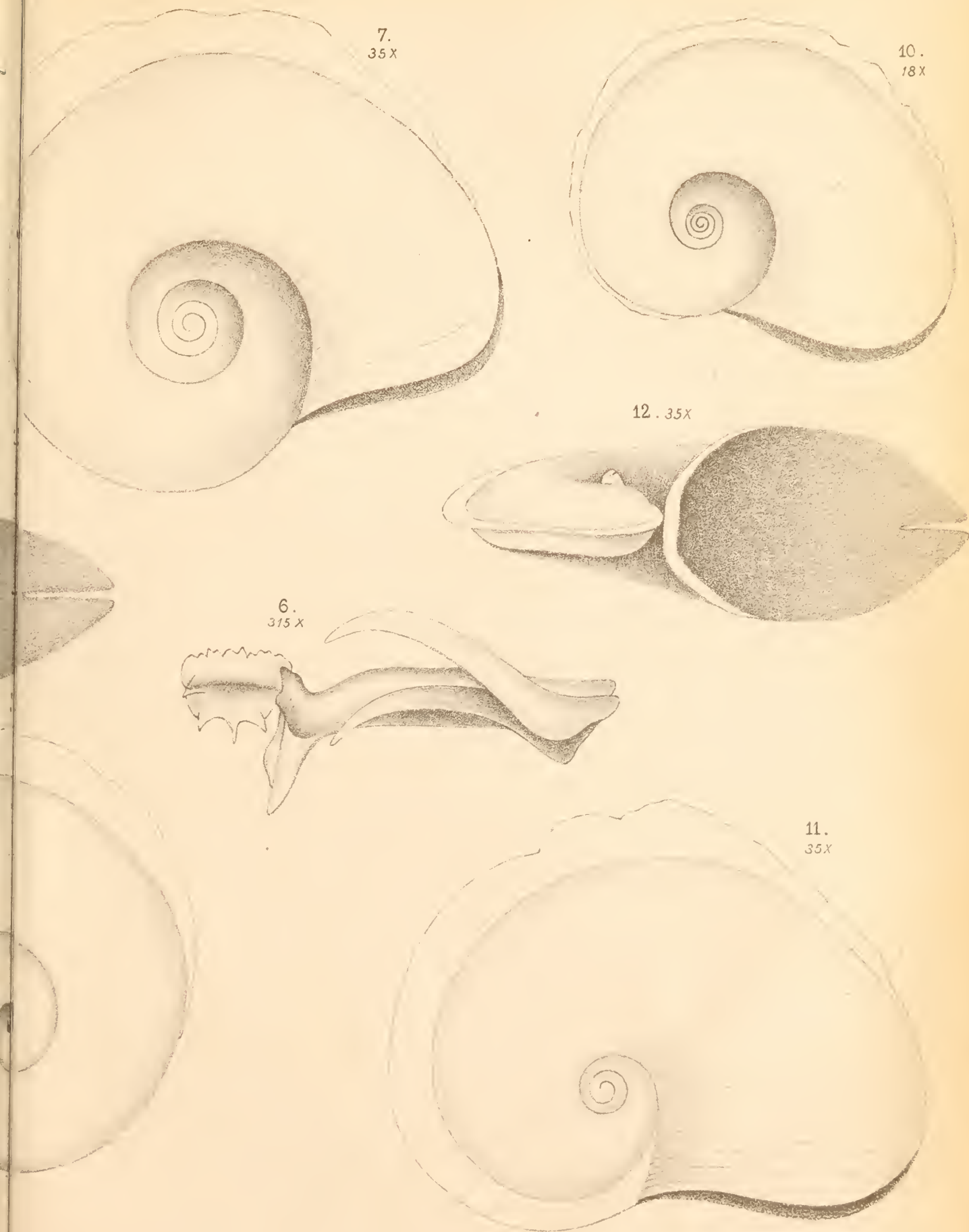
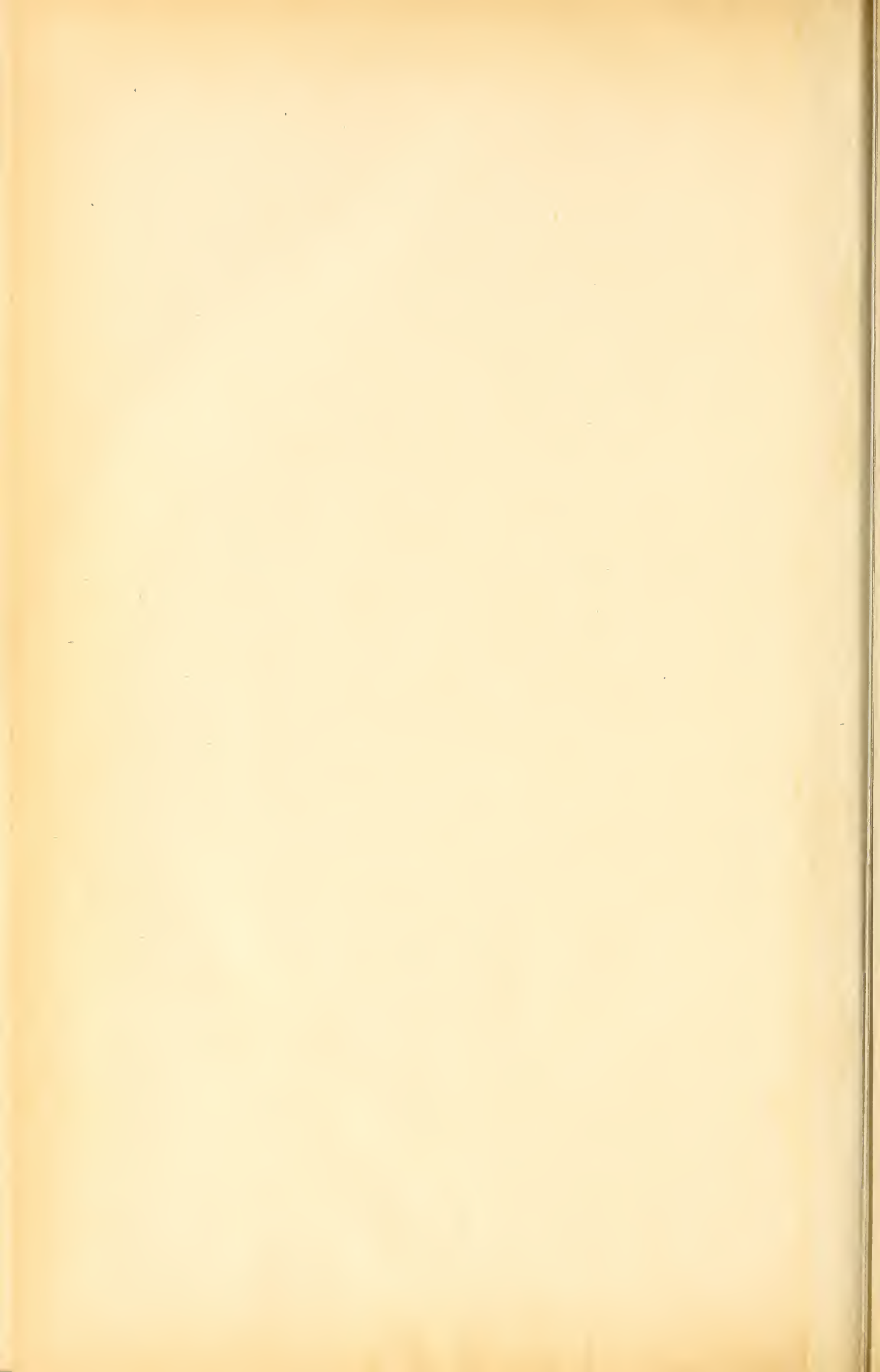
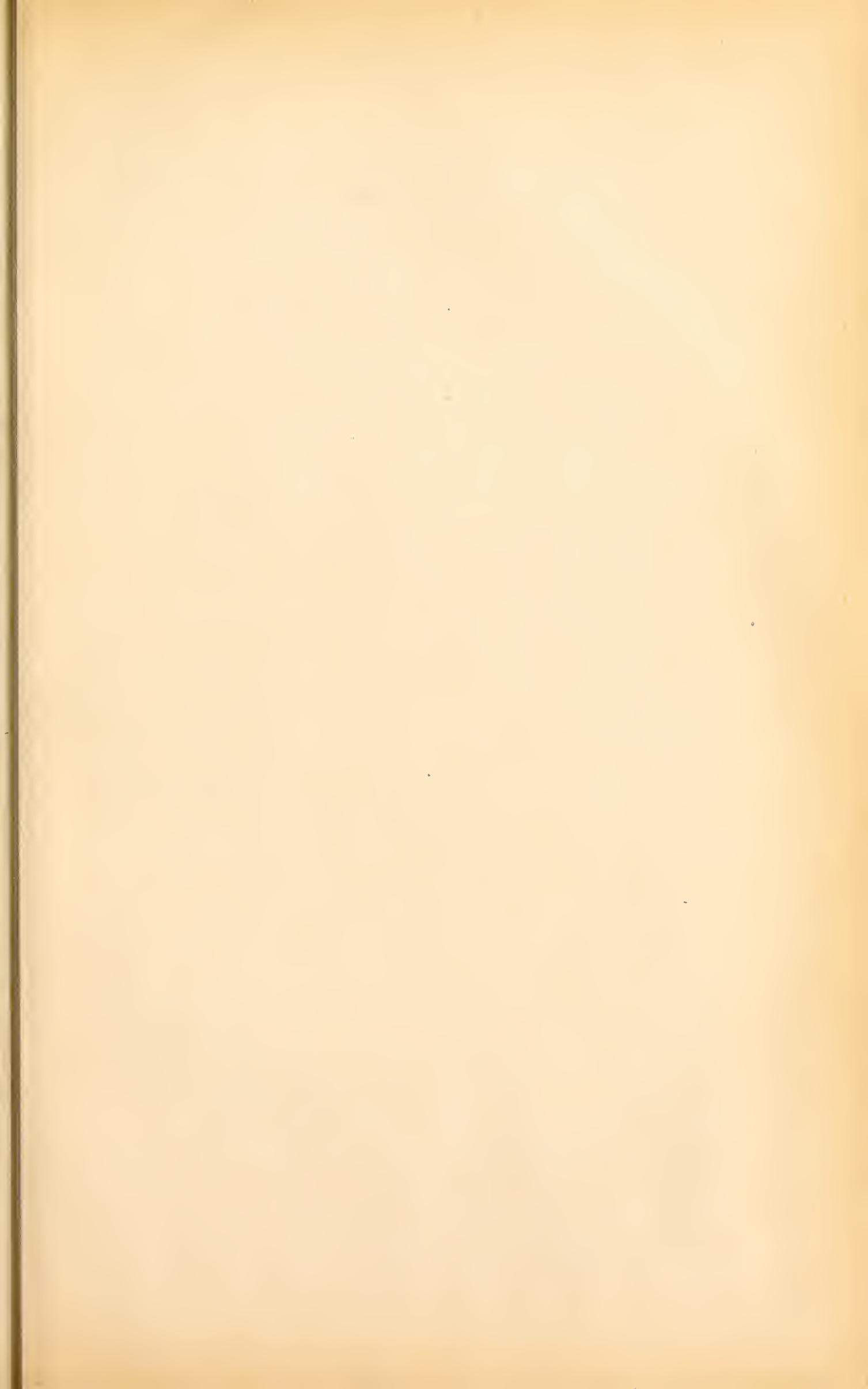


Fig. 10. *Atlanta gaudichaudi* Souleyet.
Figs. 11—12. „ *lesueuri* Souleyet.

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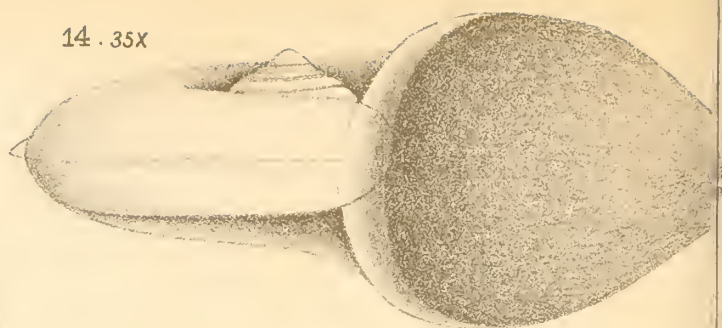




13 .35x



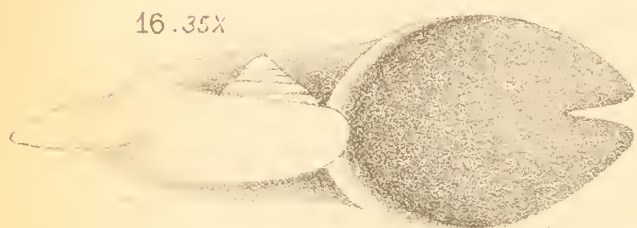
14 .35x



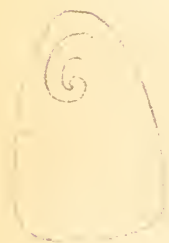
15 .35x



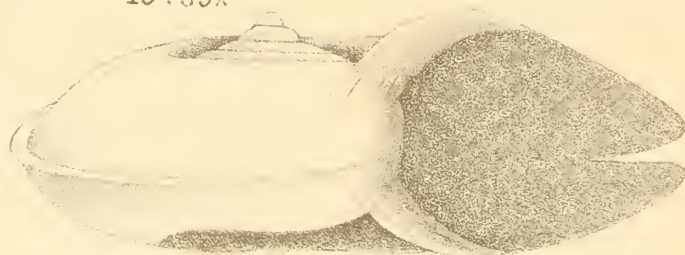
16 .35x



17 .35x



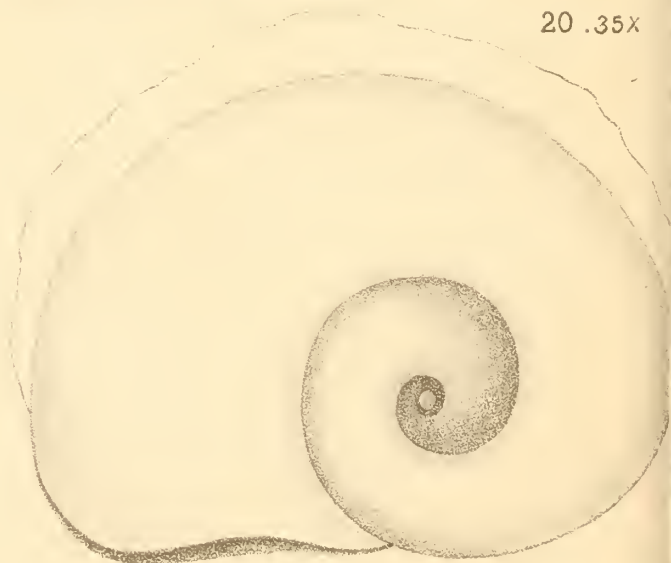
19 .35x



18 .35x



20 .35x



J. J. TESCH del.

Figs. 13—14. *Atlanta inflata* Souleyet.

” 15—17. ” *quoyana?* Souleyet.

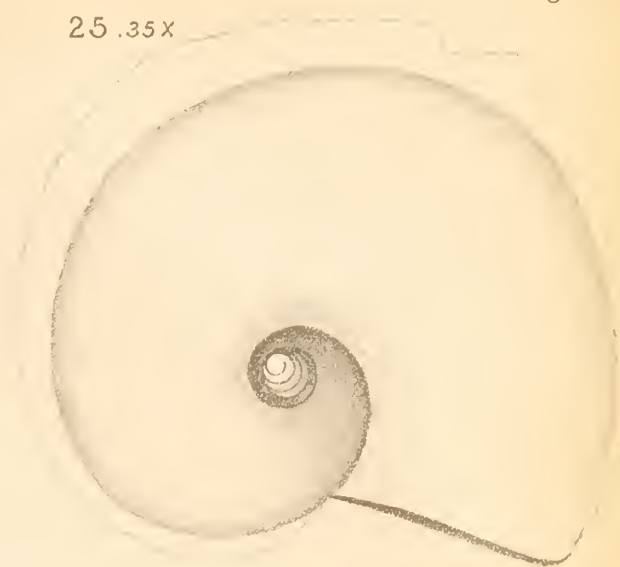
” 18—20. ” *depressa* Souleyet.

Figs. 27—29. *Atlar* rusc

24. 35X



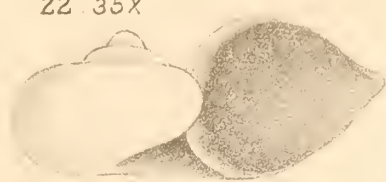
25. 35X



21. 35X



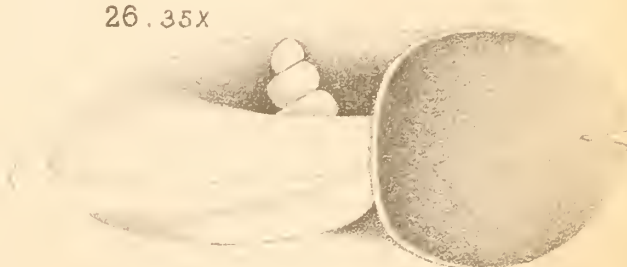
22. 35X



27. 35X



26. 35X



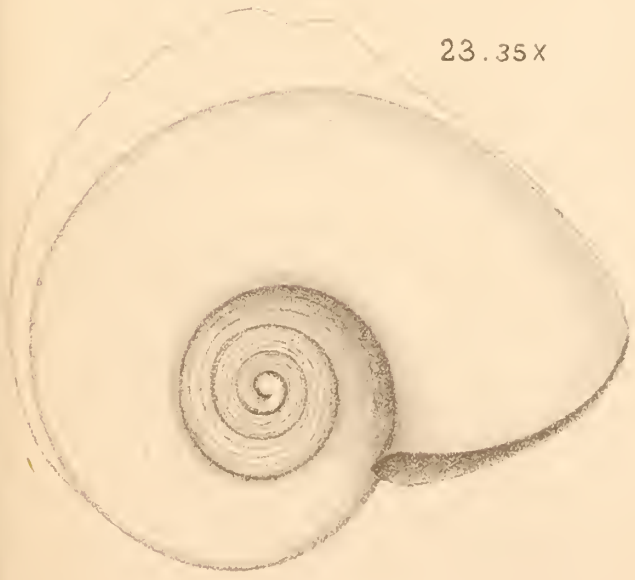
28. 35X



29. 35X

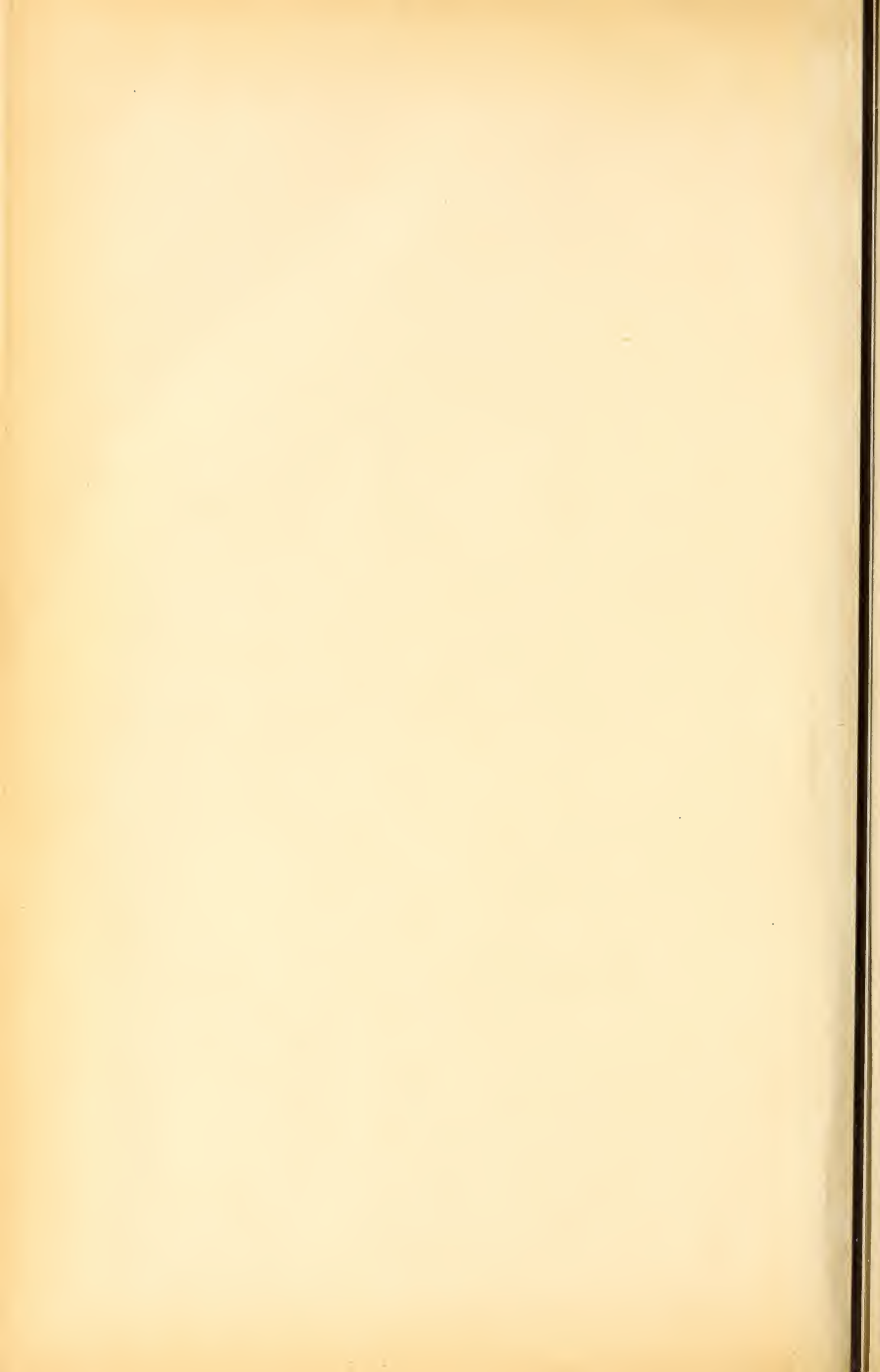


23. 35X



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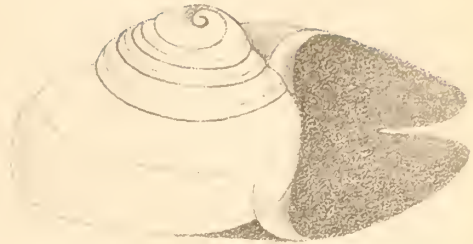
Figs. 21—22. *Atlanta depressa* (?) *Souleyet*.
 „ 23—24. „ *helicinoides* *Souleyet*.
 „ 25—26. „ *turriculata* *d'Orbigny*.
Asca Souleyet.



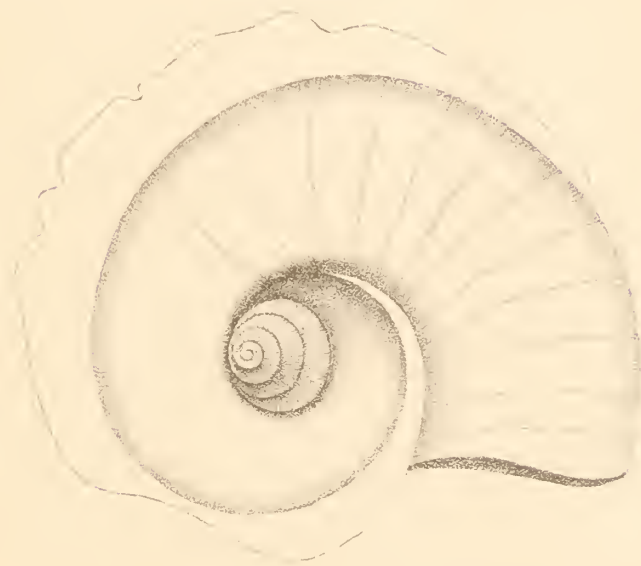
31. 18x



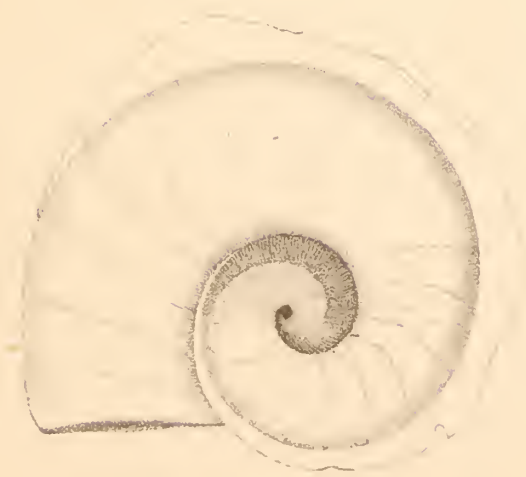
34. 35x



30. 18x



32. 18x



33. 35x



J. J. TESCH del.

Firma P. W. M. TRAP impr.

Figs. 30—32. *Atlanta inclinata* Souleyet.
" 33—34. " *gibbosa* Souleyet.

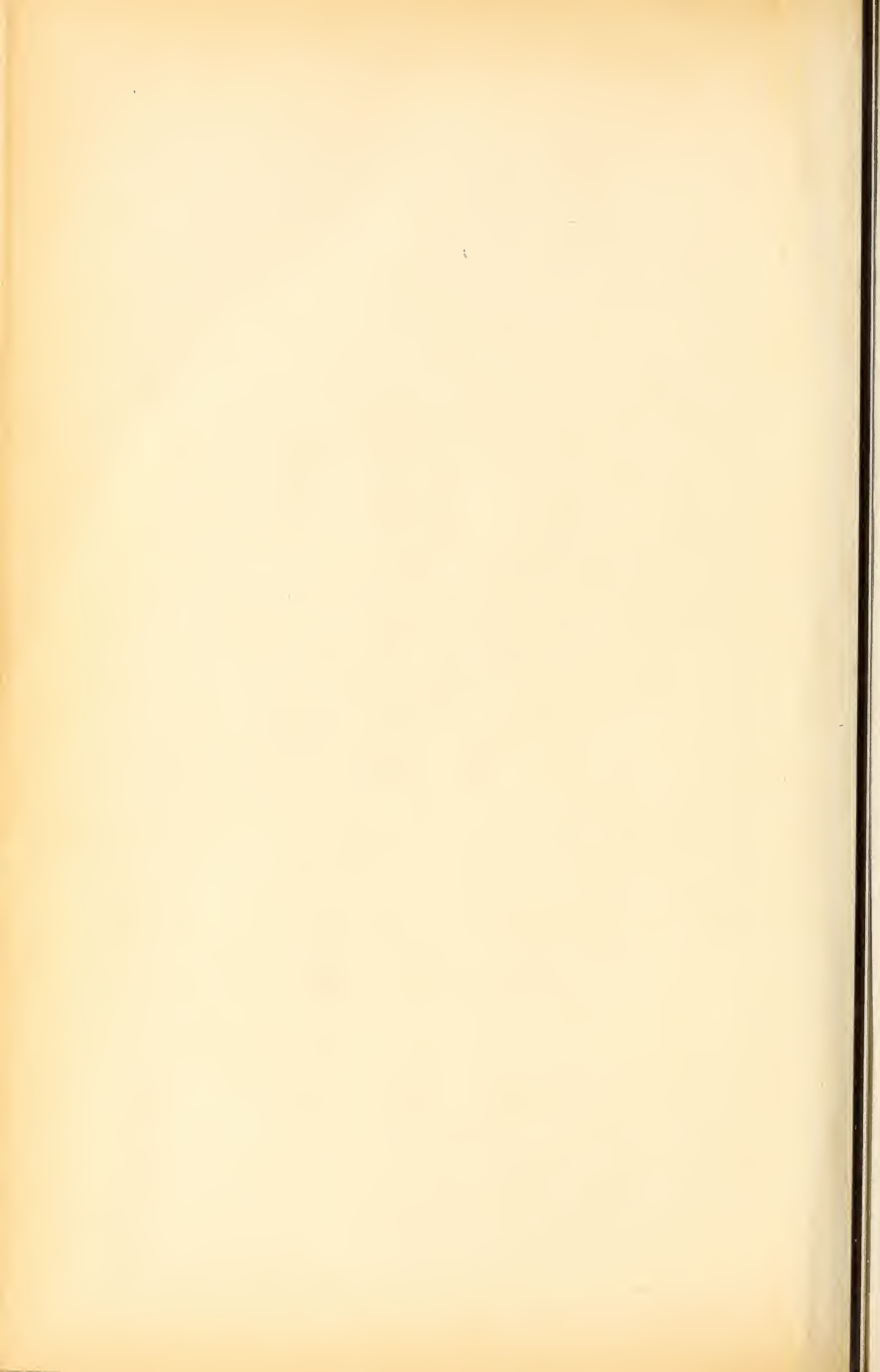


Fig. 2.

Fig. 1.

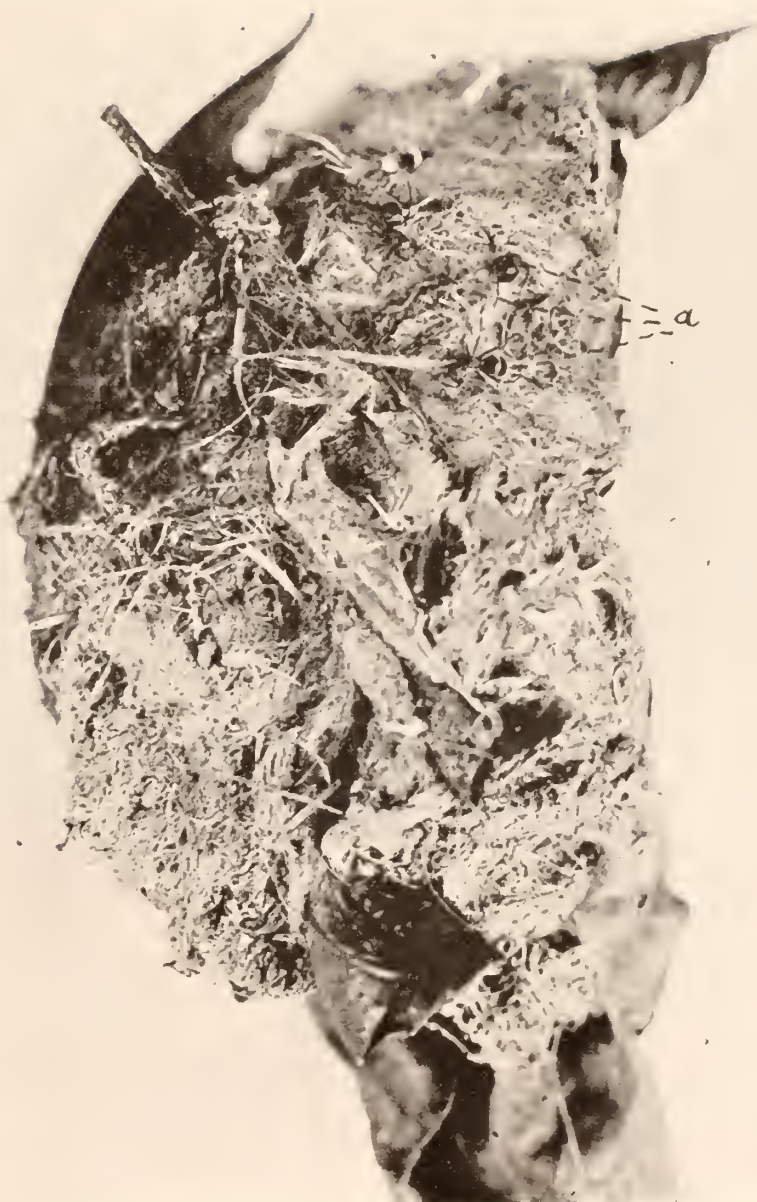
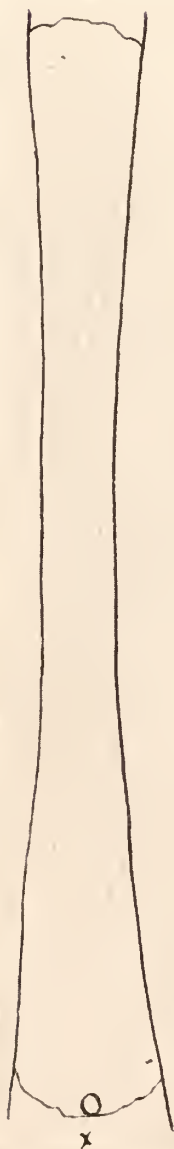


Fig. 1. Gespinnstnest von *Polyrhachis bicolor* Sm. aus Java ($\frac{1}{3}$ der natürl. Grösse).
x = Eingangsöffnung.

Fig. 2. Gespinnstnest von *Polyrhachis laboriosa* Sm. vom Congo (schwach verkleinert).
a = auf dem Neste sitzende Arbeiterinnen von *Polyrhachis*.

Pronotum narrower than the head, as broad as long, anterior margin truncate, posterior margin rounded, sides straight. Prozona brown red, metazona dark brown in the centre and white at each side.

Elytra short, but longer than pronotum, blackish brown, with a round white discoidal spot, the apical extremity white.

Wings abbreviated.

Femora and tibiae rather thick, brown; tarsi slender, yellow, 3rd segment not very hairy.

Abdomen convex, shining, purple-black, very minutely punctulated; stout in the middle, tapering towards the apex.

Last dorsal segment angustate and truncate.

Forceps subcontiguous, straight, tapering, hairy.

Hab. Java: Semarang. — 1 ♀ in the Leyden Museum. (Edw. Jacobson, 1896).

This species, which has the distinction of being the smallest earwig known, somewhat resembles *L. feae* in colour; it may be known by the large, wide and tumid head and by the coloration of the elytra and pronotum. These points are so distinctive, that I have not hesitated to name and describe it, even though the male is not known.

Eastry, Kent, May 28th 1908.

NOTE XIV.

DIAGNOSES OF NEW SPECIES
OF MACRUROUS DECAPOD CRUSTACEA FROM THE
„SIBOGA-EXPEDITION”

BY

Dr. J. G. DE MAN.

III. 1)

This paper contains the diagnoses of 11 new Species and of 2 new Varieties, all belonging to the genus *Alpheus* Fabr. The Macrura, collected by the „Siboga-Expedition”, are at present at Ierseke, but will be transferred to the Zoological Museum of the University of Amsterdam, as soon as they have been worked out.

1. *Alpheus Hailstonei* Cout., var. *laetabilis*, n.
Station 49a. Lat. 8°23'.5 S., long. 119°4'.6 E. Sapeh-strait. Depth 70 M.
Station 65a. Lat. 7°0' S., long. 120°34'.5 E. Depth from 400—120 M.
Station 154. Lat. 0°7'.2 N., long. 130°25'.5 E. Depth 83—59 M.
Station 240. Banda-anchorage. Depth from 9—36 M.
Station 282. Lat. 8°25'.2 S., long. 127°18'.4 E. Anchorage between Nusa Besi and the N. E. point of Timor. Depth 27—54 M.
Station 285. Lat. 8°39'.1 S., long. 127°4'.4 E. Anchorage South coast of Timor. Depth 34 M.

1) The first Part, containing the diagnoses of 28 new Species and of 1 new Variety, was published in 1905 in the „Tijdschrift der Ned. Dierk. Vereen.” (2) T. IX, pp. 587—614, the second Part with 19 new Species and 1 new Variety in 1907 in the „Notes from the Leyden Museum”, Vol. XXIX, pp. 127—147.

Station 303. Haingsisi, Samau-island. Depth up to 36 M.

Station 310. Lat. $8^{\circ}30' S.$, long. $119^{\circ}7'.5 E.$ Depth 73 M.

This variety differs from the typical species inhabiting the Laccadive Archipelago by the dactyli of the three posterior legs that are armed, at about the distal fourth of their posterior margin, with a small accessory claw, whereas their anterior margin, a little farther distant from the extremity, carries a small tooth or spine, lying contiguous to that margin and at the base of which a few setae are inserted. Upper margin of meropodite of larger chelipede with 4 or 5, inner margin with 8 or 9 movable spinules; larger chela in adult specimens slightly broader (higher) than in the typical form. Fourth joint of carpus of 2nd legs distinctly shorter than the 2nd and in a less degree also than the 5th. Propodites of 3rd and 4th legs $1\frac{1}{3}$ — $1\frac{1}{2}$ times as long as the carpopodites.

Length 15 mm.

2. *Alpheus Hailstonei* Cout., var. *assimulans*, n.

Station 260. Lat. $5^{\circ}36'.5 S.$, long. $132^{\circ}55'.2 E.$

2,3 miles N. 63° W. from the North point of Nuhu Jaan, Kei-islands. Depth 90 M.

Station 282. Lat. $8^{\circ}25'.2 S.$, long. $127^{\circ}18'.4 E.$

Anchorage between Nusa Besi and the N. E. point of Timor. Depth 27—54 M.

Station 305. Mid-channel in Solor-strait off Kampong Menanga. Depth 113 M.

Closely related to the typical species and perhaps not different at all.

Second joint of antennular peduncle one and a half as long as the visible part of the 1st and $2\frac{1}{2}$ -times as long as the 3rd, stylocerite reaching to the end of 1st joint; carpocerite just as long as antennular peduncle, scaphocerite also as long as the latter or hardly longer. Inner margin of meropodite of larger chelipede with 4—6 small spinules;

larger chela in adult individuals broader (or higher) than in the typical species, the proportion between length and breadth being in the adult male 2,58, in the adult female 2,76, in the typical species, however, 3,33.

Propodites of 3rd legs, in adult individuals, but one fourth longer than the carpopodites; dactyli without accessory claw on the posterior margin, but with a tooth on the anterior, lying close to it, as in the var. *laetabilis*, which tooth probably also occurs in the typical species, as it may easily be overlooked.

Length 19 mm.

3. *Alpheus facetus*, n. sp.

Station 273. Anchorage off Pulu Jedan, East coast of Aru-islands (Pearl-banks). Depth 13 M.

A new species of the group „*macrochirus*” Cout., closely related to *A. gracilis* Heller and *A. splendidus* Cout.

Rostrum acute, projecting straight forward, as long as 1st joint of antennular peduncle, narrow, rostral carina not compressed, obtuse, prominent and reaching almost to the middle of the carapace. Orbital spines acute, much shorter than the rostrum, arising from the anterior margin of the orbital hoods, not, as in *A. splendidus*, from their upper surface. Telson one and a half as long as broad, its posterior margin without dentiform prominence. Movable spine at the postero-lateral angle of the exopodite of caudal fan black.

Second joint of antennular peduncle a little shorter than the visible part of the 1st, 3rd joint one sixth shorter than 2nd; stylocerite reaching to the middle of 2nd joint. Carpo-cerite longer than the antennular peduncle, stout; spine of basicerite almost as long as 1st joint of the antennular peduncle.

Larger chela almost 3-times as long as high, fingers two fifths of the palm, lower border entire, rounded, upper border with a longitudinal groove, bounded by two ridges.

Smaller chela 5-times as long as high, fingers just as long as the palm, which is nearly cylindrical, smooth and entire.

Carpus of 2nd legs with the 2nd joint half as long as the 1st, the 5th slightly longer than the 2nd. Meropodite of 3rd legs unarmed, 5-times as long as broad, carpus half as long; propodite 1,6-times as long as the carpus, dactylus hardly one third of the propodite, with no accessory claw on the posterior border, but with a minute tooth at the distal third of the anterior, contiguous to it.

Length 18 mm.

4. *Alpheus consobrinus*, n. sp.

Station 78. Lumu-Lumu-shoal, Borneo-bank. Reef.

Station 96. South-east side of Pearl-bank, Sulu-archipelago. Depth 15 M.

Station 115. East side of Pajunga-island, Kwandang-bay. Reef-exploration.

Station 125. Anchorage off Sawan, Siau-island. Depth 27 M. Reef-exploration.

Station 213. Saleyer-anchorage and Surroundings. Depth up to 36 M.

Station 299. Lat. 10°52'.4 S., long. 123°1'.1 E. Boeka- or Cyrus-bay, South coast of Rotti-island. Depth up to 36 M.

Station 315. Anchorage east of Sailus Besar, Pater-noster-islands. Depth up to 36 M.

A new species of the group „*crinitus*” Cout. s. s., closely related to *A. bucephalus* Cout. and *A. clypeatus* Cout.

Rostrum, frontal margin of the carapace, antennular and antennal peduncles as in *A. bucephalus*, but the basicerite is armed with a small, infero-lateral spinule and scaphocerite slightly longer than carpocerite. Telson a little narrower posteriorly than in *A. bucephalus*, its length being in proportion to the breadth of posterior margin as 9 : 3¹/₃, in *A. bucephalus* as 9 : 4.

Meropodite of larger chelipede of the male one and a

half as long as broad, inner margin with acute tooth near the far end; chela a little less high in proportion to its length, but for the rest as in *A. bucephalus*. Meropodite of larger chelipede of female twice as long as broad, chela considerably smaller than in the male, little more than half as long.

Chela of smaller chelipede of the male resembling that of *A. clypeatus*, fingers slightly longer than the palm; dactylus much broadened, half as broad as long, fringed with hairs along its inner (upper) edge. Inner (upper) surface of the chela hairy, 3-times as long as broad.

Chela of smaller chelipede of the female similar to that of *A. bucephalus*, the palm being in proportion to the fingers as 13:10.

Carpus of 2nd legs as in *A. bucephalus*, 2nd joint in the male almost 3-times, in the female somewhat more than twice as long as the 1st, 5th joint in the male slightly longer than the 1st, in the female both of equal length.

Legs of 3rd and 4th pairs as in *A. bucephalus*.

Length of male 14,5 mm., of adult female 15,5 mm.

5. *Alpheus bicostatus*, n. sp.

Station 37. Sailus Ketjil, Paternoster-islands. Depth 27 M. and less.

Station 99. Lat. 6°7'.5 N., long. 120°26' E. Anchorage off North-Ubian. Depth 16—23 M.

Station 205. Buton-strait, between floating seaweed.

A new species of the group „*insignis*” Cout., closely related to *A. bidens* (Oliv.) and *A. cristatus* Cout.

Rostrum acute, reaching about to the end of 1st joint of antennular peduncle, rostral carina subacute or obtuse, little prominent, without the teeth characteristic of *A. cristatus*, but with a very small tubercle immediately behind the base of the orbits, as in *A. bidens*. Midway between this tubercle and the frontal margin, at either side, a thin lamellar crest with rather sharp edge passes from the rostral carina

obliquely backward, about to the level of the small, median tubercle. Orbits prominent, as in *A. bidens*, grooves between the orbits and the rostral carina broad, moderately deep. Frontal margin at either side, close to the orbits, with a slender spine as in *A. cristatus*, these spines about one third the length of the rostrum proper.

Carapace with an acute, well-developed, though small, pterygostomian spine.

Antennal and antennular peduncles and thoracic legs similar to those of *A. bidens*, but the dactylus of the smaller chelipede of the male, which also presents the *Balaeniceps*-shape, appears broader in proportion to its length and more flattened, whereas the palm presents no trace of a transverse groove.

Length of male 18,5 mm., of female 20,5 mm.

6. *Alpheus praedator*, n. sp.

Station 181 or 231. Ambon. Reef-exploration.

Another new species of the group „*insignis*” Cout., closely related to *A. bidens* (Oliv.).

Rostrum acute, narrow, reaching to the middle of 2nd joint of antennular peduncle. Rostral carina interrupted, with a small, obtuse tubercle just behind the interruption, as in *A. bidens*; interorbital part of rostral carina strongly compressed, sharp-edged and rising, between the corneae and the interruption, to a high, arcuate crest. The obtuse tubercle is continued in a straight, obtuse crest, that reaches to the posterior third of the carapace, bounded at either side by a shallow groove or depression, that ends abruptly at the posterior extremity of the crest. At either side of the rostral carina, at the base of the eye-hoods, a pointed tooth, broad at its base, as in *A. bidens*; orbits and frontal margin also as in this species.

Second joint of antennular peduncle one and a half as long as thick, little longer than the two other joints that are of equal length; 1st joint with 2 spines as in *A. bidens*.

Larger chela as in *A. bidens*, but the groove on the upper border near the dactylus is continued on the outer (lower) surface of the palm until near the lower border and from the middle of this groove a broad, though shallow depression extends almost to the middle of the outer surface of the palm; as the fingers, that measure two fifths of the length of the chela, are still more turned outward than the palm, the upper border of the dactylus is almost situated inferiorly. Lower border of the immobile finger grooved longitudinally.

Legs of 3rd and 4th pair of a stouter shape than those of *A. bidens*, but for the rest resembling them. So e. g. are the meropodites of the 3rd legs, armed with a strong, acute tooth, 4-times as long as broad in the middle and the propodites 4 $\frac{1}{2}$ -times as long as broad.

One specimen, perhaps a young female, 14 mm. long.

7. *Alpheus tenuicarpus*, n. sp.

Station 114. Lat. 0°58'.5 N., long. 122°55' E. Kwan-dang-bay-entrance. Depth 75 M.

Station 311. Sapeh-bay, East coast of Sumbawa. Depth up to 36 M.

A species of small size, pertaining to the group „*insignis*” Cout. or „*brevirostris*” de M. and related to *A. paralpheopsides* Cout.

Frontal margin exactly as in *A. paralpheopsides*, rostrum acute, almost reaching to the middle of 1st joint of antennular peduncle, rostral carina sharp but little prominent and not reaching beyond the bases of the orbital hoods. Telson narrow, a little more than twice as long as broad, spinules on the upper surface large and situated close to the lateral margins.

Second joint of antennular peduncle twice as long as thick, just as long as the visible part of the 1st and one and a half as long as the 3rd joint; carpocerite longer than antennular peduncle, terminal spine of scaphocerite reaching but little beyond the blade and extending almost to the end of the carpocerite.

Larger chela of the male 3-times as long as high, half as thick as high, without transverse groove on the upper border, fingers almost half as long as the palm. Meropodite $3\frac{1}{2}$ -times as long as broad, upper margin unarmed, infero-internal margin with 4 spinelets and a small tooth at the end. Fingers of smaller chela in the male just as long, in the female a little ($\frac{1}{7}$) longer than the palm, which is 3-times as long as high; dactylus in the male *Balaeniceps*-shaped.

Second joint of carpus of 2nd legs one third longer than 1st joint, the three last joints of equal length, half as long as 1st; carpus slender and thin, the 2nd joint 9-times as long as thick.

Meropodite of 3rd legs slender, 8-times as long as broad, unarmed; carpus half as long, propodite 1,2-times as long as carpus, somewhat narrowing towards distal extremity; dactylus half as long as the propodite.

Length of male 13 mm., of egg-bearing female 13,5 mm.

8. *Alpheus rapacida*, n. sp.

Station 279. Ruma-Kuda-bay, Roma-island. Depth 36 M.

Station 313. Anchorage east of Dangar Besar, Saleh-bay. Depth up to 36 M.

Probably a new species of the group „*brevirostris*”. Closely related to *A. rapax* de Haan (nec Fabr.), but distinguished by its much smaller size, the male being 22,5 mm. long, the egg-bearing female 18 mm.

Rostrum acute, reaching about to the middle of the visible part of 1st joint of antennular peduncle, continued in a carina, which, rather sharp between the orbital hoods, becomes obtuse behind them, though it may be followed almost to the middle of the carapace.

Second joint of antennular peduncle which is as long as the carpocerite, little (one fourth) longer than the visible part of the 1st; 3rd joint half as long as second. Scaphocerite 3-times as long as broad, distinctly longer than the peduncles; spine on the basicerite small.

Larger chela of the male finely granular both on the outer and inner side, slender, almost 4-times as long as high, without ridges on the outer surface; upper border of the palm without a transverse groove near the dactylus. Chela compressed, half as thick as high, fingers little more than half as long as the palm. Smaller chela of the male resembling that of *A. rapax* de Haan (vide de Man, in: Trans. Linn. Soc. 2nd Ser. Vol. IX, Part 11, 1907, Pl. XXXIII, Fig. 52), not *Balaeniceps*-shaped; fingers twice as long as the palm, gaping; that of the female differs by the palm being slightly longer in proportion to the fingers.

Second joint of carpus of 2nd legs little ($\frac{1}{5} - \frac{1}{7}$) longer than 1st, chela just as long as 1st joint. Meropodite of 3rd legs unarmed, 5-times as long as broad; propodite one and a half as long as the unarmed carpus, slightly curved, slender, narrowing towards distal extremity, with only 3 or 4 small spinules on its proximal half, both margins beset with long setae; dactylus two thirds of the propodite, slightly arcuate, lanceolate, in the middle much broader than high.

9. *Alpheus lepidus*, n. sp.

Station 51. Madura-bay and other localities in the southern part of Molo-strait. Depth 54—90 M.

Station 114. Lat. 0° 58'. 5 N., long. 122° 55' E. Kwandang-bay-entrance. Depth 75 M.

A new species of small size of the group „*brevirostris*” de M., closely related to *A. rapacida*, n. sp.

Rostrum acute, reaching a little beyond the middle of the visible part of 1st joint of antennular peduncle, as broad at its base as it is long, continued in a narrow, sharp and prominent carina that extends backward to behind the middle of carapace. Telson narrow, twice as long as broad anteriorly.

Second joint of antennular peduncle one third longer than the visible part of the 1st, twice as long as thick;

carpocerite little longer than antennular peduncle, spine on the basicerite small, shorter than rostrum; scaphocerite 3-times as long as broad, just reaching beyond the carpocerite, terminal spine extending with one third of its length beyond the tip of the blade. Terminal joint of external maxillipedes $4\frac{1}{2}$ -times as long as broad.

Meropodite of larger chelipede of female 3-times as long as broad, upper margin unarmed, infero-external margin finely serrulate, infero-internal with 4 movable spinules and, at the extremity, with a small acute tooth. Chela of female 3-times as long as high, half as thick as high; palm without a transverse groove on the upper border, twice as long as the fingers and appearing finely granular under a lens, the granules acute.

Second joint of carpus of 2nd legs twice or a little more than twice as long as 1st joint, chela one and a half as long as 1st joint; carpus more slender than that of *A. rapacida*. Meropodite of 3rd legs unarmed, more slender than that of *A. rapacida*, 6-times as long as broad, following joints about as in this species.

Largest specimen 17 mm. long, egg-bearing females 14 or 16 mm.

10. *Alpheus sibogae*, n. sp.

Station 49a. Lat. 8° 23'. 5 S., long. 119° 4'. 6 E.

Sapeh-strait. Depth 70 M.

Station 51. Madura-bay and other localities in the southern part of Molo-strait. Depth from 54—90 M.

Station 305. Mid-channel in Solor-strait off Kampong Menanga. Depth 113 M.

A remarkable new species of the group „*brevirostris*” de M., of small size, the male being 12,5 mm. long, the egg-bearing female 13,5 mm.

Rostrum acute, narrow, reaching to the distal third of the visible part of 1st joint of antennular peduncle, rostral carina sharp, continued to just behind the middle of the

carapace and presenting, a little posterior to the orbital hoods, a small obtuse tubercle or prominence. Orbits rounded, unarmed. Telson narrow, twice as long as broad anteriorly.

Second joint of antennular peduncle slender, 4-times as long as thick, one third longer than the visible part of 1st joint. Carpocerite and scaphocerite as long as antennular peduncle, scaphocerite narrow, 4-times as long as broad, its outer margin concave.

Meropodite of larger chelipede of the male 3-times as long as broad, upper margin coarsely denticulate or tuberculate along its whole length, unarmed at extremity, infero-internal margin with 4 acicular spinules and terminating in an acute tooth. Chela turned outward, 3-times as long as high, and about half as thick as high; upper margin of the palm, which is almost 3-times as long as the fingers, rounded, without a transverse groove; outer surface with a moderately deep groove, rather broad in the middle, narrow proximally, extending from the carpal articulation to the fingers and bounded inferiorly by a ridge that runs parallel with the rounded lower margin of the palm.

Palm of smaller chelipede of the male hardly longer than the fingers, of the female a little shorter than the fingers, 3-times as long as high; upper border of the palm without a transverse groove, outer surface in the male with a shallow groove extending on its lower half from the carpal articulation to the fingers. Dactylus in the male *Balaeniceps*-shaped, presenting a spoon-like shape when looked at from above; in the female the fingers are slender, tapering and shutting together.

Carpus of 2nd legs slender, 2nd joint one fourth or one fifth longer than 1st, 4th joint slightly longer than the 3rd and the 5th that are subequal.

Meropodite of 3rd legs unarmed, slender, 8—9-times as long as broad; carpus slender, propodite one fourth longer than carpus, straight, not narrowing distally; dactylus two fifths of the propodite, slightly arcuate, not broader than high.

11. *Alpheus pubescens*, n. sp.

Station 43. Anchorage off Pulu Sarassa, Postillon-islands. Depth up to 30 M.

Station 60. Haingsisi, Samau-island, Timor. Depth 36 M.

Station 71. Makassar. Depth up to 32 M.

Station 77. Lat. 3° 27' S., long. 117° 36' E. Borneo-bank. Depth 59 M.

Station 162. Between Loslos and Broken-islands, west-coast of Salawatti. Depth 18 M.

Station 273. Anchorage off Pulu Jedan, East coast of Aru-islands. Depth 13 M.

A new species of small size of the group „*brevirostris*”, the male being 20,5 mm. long, the egg-bearing female 18 mm.

Carapace covered with a close, though short pubescence. Rostrum acute, narrow, reaching to the middle of the visible part of 1st joint of antennular peduncle, rostral carina continued to the middle of the carapace, obtuse in the male, a little sharper in the female, and separated from the rounded, unarmed orbital hoods by narrow grooves. Telson not yet twice as long as broad anteriorly, spinules of upper surface large.

Second joint of antennular peduncle a little ($\frac{1}{8} - \frac{1}{3}$) longer than the visible part of 1st, third joint three fifths of the 2nd; stylocerite pointed, reaching to the end of 1st joint. Carpocerite as long as scaphocerite, a little longer than the antennular peduncle; scaphocerite 3-times as long as broad, its outer margin concave, terminal spine reaching a little beyond the blade and curved inward.

Meropodite of both the larger and the smaller chelipede of the male $2\frac{1}{2}$ -times as long as broad, upper margin unarmed, infero-internal margin with 4 or 5 small spinules and, at the extremity, with an acute tooth. Larger chela, in the male, rather high, 2,4-times as long as high, compressed, with a transverse groove on the flattened upper

border, the outer margin of which is ridged; infero-external margin rather sharp. Fingers a little shorter than the palm. Smaller chela of the male resembling that of *A. djeddensis* Cout.

Smaller chela of the female 5,6-times as long as high, fingers one and a half as long as the palm, slender, shutting together.

Carpus of 2nd legs slender, 2nd joint one and a half to twice as long as the 1st, in the adult female both joints are nearly of equal length; three last joints of equal length.

Meropodite of 3rd legs of the male unarmed, 5-times as long as broad, carpus half as long; propodite straight, slightly narrowing distally, 1,3-times as long as the carpus and 5-times as long as broad; dactylus half as long as the propodite, not flattened, not broader than thick, simple, styliform.

12. *Alpheus savuensis*, n. sp.

Station 58. Anchorage off Seba, Savu.

A species, probably of small size, of the group „*brevirostris*” de M., closely related to *A. pubescens* n. sp., from which it differs by the following:

Carapace not pubescent, almost glabrous. Rostrum just as long as broad at its base, rostral carina rather sharp between the orbital hoods, almost indistinct posterior to them. Stylocerite not spiniform at its extremity, which is, however, acute, curved inward and reaches to the distal sixth of the visible part of 1st joint.

Palm of larger chela one and a half as long as the fingers, outer margin of lower border rounded, for the rest the chela resembles that of *A. pubescens*.

Merus of smaller chelipede of the male stouter, 2,3-times as long as broad, chela distinctly shorter than the carapace, stouter, only 3-times as long as high, upper border without a transverse groove, fingers slightly longer than the palm, for the rest as in *A. pubescens*.

Notes from the Leyden Museum, Vol. XXX.

Meropodite of 3rd legs stouter than that of *A. pubescens*, 4-times as long as broad; propodite also 4-times as long as broad, 1,2-times as long as the carpus; dactylus as in *A. pubescens*.

Length of the single male that was collected: 18,5 mm.

13. *Alpheus proseuchirus*, n. sp.

Station 114. Lat. 0° 58'. 5 N., long. 122° 55' E.

Kwandang-bay-entrance. Depth 75 M.

Station 116. Lat. 0° 58'. 5 N., long. 122° 42'. 5 E.

West of Kwandang-bay-entrance. Depth 72 M.

A new species of the group „*Edwardsii*” de M., closely related to *A. pareuchirus* Cout.

Rostrum as in *A. bis-incisus* de Haan, narrow-triangular, flattened above, about 3-times as long as broad at base, acute, reaching almost to the end of 1st joint of antennular peduncle, and beginning at the base of the eye-hoods. Orbital hoods rounded, unarmed. Second joint of antennular peduncle as long as the visible part of 1st joint, not longer; 3rd joint two thirds of the 2nd. Spine on the basicerite very small. Carpocerite as long as scaphocerite, slightly longer than antennular peduncle; scaphocerite almost 3-times as long as broad, terminal spine reaching only with one sixth of its length beyond the tip of the blade that extends to the extremity of the antennular peduncle, the spine of a less slender shape than in *A. pareuchirus*.

Larger chelipede as in *A. pareuchirus*, but the fingers shorter, measuring little more than one fourth the length of the chela; smaller chelipede of the female also as in that species, fingers in proportion to the palm as 7:5, their pointed extremities crossing one another.

First joint of carpus of 2nd legs one and a half as long as the 2nd joint, that is one and a half as long as the 5th.

Posterior legs still more slender than those of *A. pareuchirus*. Meropodite of 3rd legs 9-times as long as broad, unarmed

at distal extremity, carpus three fifths of the meropodite, 8-times as long as thick distally, propodite 15 or 16-times as long as broad, one third longer than the carpus; dactylus simple, slender, one third of propodite.

Length of adult, egg-bearing female 25 mm.

Ierseke (Holland), July 1908.

NOTE XV.

ETUDE SUR LES COLOBICUS VRAIS DE L'EUROPE,
DE L'ASIE ET DE L'AUSTRALIE

PAR

A. GROUVELLE.

Les *Colobicus* (Latr. Gen. Crust. et Ins. II, 1807, p. 9) se partagent en deux groupes (Pasc. 1863, Journ. of Ent. II, p. 123) caractérisés par la longueur relative du troisième article des antennes; dans le premier, qui constitue les *Colobicus* vrais, cet article est environ aussi long que les quatre suivants réunis, tandis que chez les insectes du second il est notablement plus court.

Dans cette courte étude nous ne nous occuperons que des *Colobicus* du premier groupe, provenant de l'ancien monde à l'exclusion de l'Afrique.

Les *Colobicus* du second groupe sont peu nombreux, au moins jusqu'à ce jour (*rugosulus* Pasc., *limbatus* Pasc. et *granulosus* Sharp); de plus ils semblent beaucoup plus rares que ceux du premier. Les quelques échantillons examinés me font penser qu'ils devront être écartés des *Colobicus* Latr. et rapprochés du genre *Namuraria* Reitt.

Colobicus parilis.

Pasc. 1860, Journ. of Ent. I, p. 102.

conformis Pasc. 1863, Journ. of Ent. II, p. 124.

L'examen des types des *C. parilis* et *conformis* Pasc., conservés dans la collection du British Museum, a conduit à réunir ces deux espèces. Le *C. parilis* habite l'Inde, la Birmanie, l'Indo-Chine et toutes les Iles Malaises. C'est l'espèce qui se trouve le plus fréquemment.

Notes from the Leyden Museum, Vol. XXX.

Colobicus amplus, nov. sp.

Oblongus, latus, convexus, subopacus, setis suberectis, brevissimis, griseis flavisque vestitus; rufo-castaneus, antennis, pedibus, bucca, prothoracis elytrorumque marginibus reflexis dilutioribus. Tertius articulus antennarum tam elongatus quam simul quatuor sequentes. Caput transversum, antice latissime rotundatum, dense sed haud profunde umbilicato-punctatum, antice utrinque oblique striolatum; oculis breviter et haud dense setosis. Prothorax transversus, antice quam postice angustior, dense umbilicato-punctatus; margine antico medio arcuato et haud late subexplanato, utrinque sat profunde exciso; angulis anticis acutis, antrorsum productis; lateribus arcuatis, late explanatis; angulis posticis obtusis; basi medio arcuata, utrinque late sinuata, profunde striato-marginata. Scutellum transversum. Elytra oblonga, ad apicem separatim subacuminata, punctato-striata et subcatenulata; intervallis striarum latis, depressis, unilineato-punctatis; marginibus lateralibus haud late reflexis. — Long. 5,5 mill.

Oblong, large, convexe, presqu'opaque, couvert de soies courtes, recourbées en arrière, en général grises mais entremêlées de soies flaves; brun rougeâtre, avec les antennes, les pattes, la bouche et les marges réfléchies du prothorax et des élytres plus claires. Troisième article des antennes aussi long que les quatre suivants réunis. Tête près de moitié aussi longue que large au niveau des yeux, un peu atténuée en avant, et très largement arrondie au sommet; ponctuation formée de points très superficiels; deux courtes stries obliques en avant des yeux; ceux-ci garnis de quelques soies courtes, dressées; diamètre longitudinal des yeux presqu'égal à la moitié de la longueur de la tête. Prothorax très rétréci en avant, à peine à la base, environ trois fois plus large dans sa plus grande largeur que la tête et presque trois fois plus large que long; couvert d'une ponctuation formée de points ombiliqués, très superficiels, présentant jusqu'à un certain point l'aspect de granulations très déprimées; bord antérieur arrondi dans le milieu et

assez largement subexplané, fortement sinué de chaque côté; angles antérieurs aigus, saillants en avant; bords latéraux régulièrement arrondis, très largement explanés; angles postérieurs obtus; base arrondie dans le milieu, sinuée de chaque côté, bordée par une forte strie, formant un bourrelet un peu relevé. Écusson oblong, transversal. Elytres à la base un peu plus larges que le prothorax, faiblement élargis jusqu'au deuxième tiers de la longueur, subacuminés séparément au sommet, environ une fois et demie aussi longs que larges ensemble dans leur plus grande largeur, assez largement explanés sur les côtés, ponctués-striés; intervalles des points subgranuleux, ombiliqués, intervalles des stries très larges par rapport à celles-ci, plans, chacun avec une ligne de points moins forts que ceux des stries.

Hab. Sumatra: Serdang (Dr. B. Hagen). — Un seul exemplaire du Musée de Leide.

Colobicus decoratus, nov. sp.

Oblongus, latus, convexus, nitidulus, setis suberectis, brevissimis, griseis et cinereis vestitus; piceus, antennis, pedibus, bucca, prothoracis elytrorumque marginibus reflexis rufo-castaneis. Tertius articulus antennarum tam elongatus quam simul quatuor sequentes. Caput subtransversum, antice rotundatum, dense sed haud profunde umbilicato-punctatum, antice utrinque oblique striolatum; oculis brevissime setosis. Prothorax transversus, antice quam postice angustior, dense umbilicato-punctatus; margine antico medio arcuato et haud late subexplanato, utrinque sat profunde exciso; angulis anticis acutis, antrorsum productis; lateribus arcuatis, late explanatis; angulis posticis rotundatis; basi medio arcuata, utrinque late sinuata, sat profunde striato-marginata. Scutellum transversum. Elytra oblonga, ad apicem separatim subacuminata, punctato-striata et subcatenulata; intervallis striarum latis, depressis, alternis unilineato-punctulatis et cinereo-setosis; marginibus lateralibus sat late reflexis. — Long. 4,7 mill.

Oblong, large, convexe, assez brillant, couvert de soies courtes, recourbées en arrière, grises, enfumées, entremêlées

de soies blanchâtres légèrement flaves, plus abondantes sur les marges latérales du prothorax et des élytres, disposées en ligne sur les intervalles alternes des stries de ces derniers; couleur brun de poix, antennes, pattes, bouche et marges réfléchies du prothorax et des élytres rougeâtres. Troisième article des antennes aussi long que les quatre suivants réunis. Tête plus longue que la moitié de la largeur au niveau des yeux, largement arrondie en avant; ponctuation formée de points très superficiels, ombiliqués; deux courtes stries obliques en avant des yeux, ceux-ci garnis de soies très courtes, dressées; diamètre longitudinal des yeux presque égal à la moitié de la longueur de la tête. Prothorax très rétréci en avant, à peine à la base, régulièrement arrondi sur les côtés, presque trois fois plus large dans sa plus grande largeur que la tête et plus de trois fois plus large que long; couvert d'une ponctuation formée de points ombiliqués, très superficiels, présentant jusqu'à un certain point l'aspect de granulations ombiliquées, très déprimées; bord antérieur arrondi dans le milieu et assez largement subexplané, fortement sinué de chaque côté; angles antérieurs aigus, saillants en avant; marges latérales très largement explanées; angles postérieurs arrondis; base arrondie dans le milieu, largement sinuée de chaque côté, bordée par une strie déterminant un bourrelet un peu relevé. Ecusson oblong, transversal. Elytres un peu plus larges à la base que le prothorax, médiocrement élargis jusqu'au deuxième tiers de la longueur, subacuminés séparément au sommet, un peu moins d'une fois et demie aussi longs que larges ensemble dans leur plus grande largeur, largement explanés sur les côtés, ponctués-striés; intervalles des points subgranuleux, ombiliqués, intervalles des stries très larges, plans.

Hab. Moluques: Gilolo. — Collections A. Grouvelle et du British Museum.

Colobicus ornatus, nov. sp.

Oblongus, sublatus, modice convexus, nitidulus, setis suberectis, brevissimis albidisque vestitus; ferrugineus. Tertius articulus

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antennarum tam elongatus quam simul quatuor sequentes. Caput transversum, ante oculos dilatatum et antice later otundatum, dense granosum, antice transversim subimpressum; oculis minimis. Prothorax transversus, antice quam postice angustior, dense umbilicato-punctatus, subgranosus; margine antico medio arcuato et substrictè explanato, utrinque sat profunde exciso; angulis anticis acutis, antrorsum productis; lateribus arcuatis, late explanatis; angulis posticis rotundatis; basi medio arcuata, utrinque late sinuata, profunde striato-marginata. Scutellum transversum. Elytra oblonga, ad apicem separatim subacuminata, punctato-striata, subcatenulata; intervallis striarum latis, planis, albide-unilineato-setosis; marginibus lateralibus substrictè reflexis. — Long. 3 mill.

Oblong, assez large, modérément convexe, un peu brillant, couvert de soies courtes, recourbées en arrière, blanchâtres, disposées sur les élytres en ligne sur chaque intervalle des stries; brun rougeâtre peu foncé. Troisième article des antennes aussi long que les quatre suivants réunis. Tête près de deux fois plus large que longue au niveau des yeux, élargie devant les yeux, largement, arrondie en avant, densément couverte de granulations déprimées, ombiliquées, transversalement subimpressionnée vers le niveau du bord antérieur des yeux; ceux-ci presque dépourvus de soies dressées; diamètre longitudinal des yeux presque égal au tiers de la longueur de la tête. Prothorax très rétréci en avant, à peine à la base, régulièrement arrondi sur les côtés, environ deux fois plus large dans sa plus grande largeur que la tête et moins de deux fois et demie plus large que long, couvert d'une ponctuation formée de points ombiliqués, très superficiels, subgranuleux; bord antérieur arrondi, marge assez étroitement explanée, lisse, de chaque côté une large sinuosité; angles antérieurs aigus, saillants en avant; marges latérales très largement explanées; angles postérieurs arrondis; base arrondie dans le milieu, largement sinuée de chaque côté, bordée par une forte strie déterminant un bourrelet un peu relevé. Ecusson oblong, transversal. Elytres à la base de la largeur du prothorax, à

peine arrondis aux épaules, subparallèles, subacuminés séparément au sommet, environ une fois et demie aussi longs que larges ensemble, à peine explanés sur les côtés, ponctués-striés; intervalles des points subgranuleux, ombiliqués; intervalles des stries très larges, plans.

Hab. Sumatra: Palembang. — Collections A. Grouvelle et du Musée de Leide.

Colobicus latus, nov. sp.

Oblongus, latus, convexus, subnitidus, setis suberectis, brevissimis, cinereis et fuscis vestitus; piceus, antennis, pedibus et prothoracis elytrorumque marginibus reflexis rufescentibus. Tertius articulus antennarum tam elongatus quam simul quatuor sequentes. Caput transversum, antice truncatum, ad angulos anticos rotundatum, subdense et haud profunde punctatum, vix perspicue granosum; oculis haud setosis. Prothorax transversissimus, antice quam postice angustior, dense granis umbilicatis minimisque vestitus, margine antico profunde emarginato, angulis anticis acutis, antrorsum productis, lateribus arcuatis, late explanatis, angulis posticis obtusis, basi medio arcuata, utrinque late sinuata, sat profunde striato-marginata. Scutellum transversum. Elytra subparallela, ad apicem attenuata et separatim subacuminata, minus sesquilogioribus quam simul latis, granoso-striata, granis densatis, depressis et umbilicatis; intervallis striarum striis duplo latioribus, marginibus lateralibus sublata reflexis. — Long. 3,5 mill.

Oblong, large, convexe, à peine brillant, couvert de soies très courtes, recourbées en arrière, foncées, entremêlées de soies grises plus abondantes sur la tête et le prothorax et sur les marges latérales des élytres; couleur brun de poix, antennes, pattes, devant de la tête et marges latérales du prothorax et des élytres rougeâtres. Troisième article des antennes aussi long que les quatre suivants réunis; dernier article de la massue suboblong, plus long que large. Tête rétrécie en avant, environ deux fois plus longue que large à la base, tronquée en avant, arrondie aux angles antérieurs; ponctuation peu marquée; yeux non

garnis de soies, peu saillants, occupant environ la moitié de la longueur du côté de la tête, échancrant fortement en arc la marge latérale de celle-ci. Prothorax très rétréci en avant, à peine à la base, régulièrement arrondi sur les côtés, environ deux fois plus large en avant que la tête, presque trois fois plus large dans sa plus grande largeur que long au niveau des angles antérieurs, densément couvert de granulations déprimées et ombiliquées, assez fines sur le disque, plus fortes sur les côtés; bord antérieur profondément échancré, subtronqué dans le fond de l'échancrure; angles antérieurs aigus, fortement saillants; marges latérales largement explanées, concaves; angles postérieurs obtus; base arrondie dans le milieu, sinuée de chaque côté, bordée par une strie laissant un intervalle très étroit. Ecusson transversal, chargé de deux fines granulations. Elytres un peu plus larges à la base que le prothorax, subparallèles jusqu'au deuxième tiers de la longueur, puis atténués et subacuminés séparément au sommet, nettement moins d'une fois et demie aussi longs que larges ensemble, largement explanés sur les côtés, striés-granuleux; granulations serrées, déprimées et ombiliquées; intervalles des stries environ deux fois plus larges que celles-ci.

Hab. Sumatra: Palembang. — Collection A. Grouvelle.

Colobicus gigas, nov. sp.

Oblongus, sublatus, convexus, nitidulus, setis suberectis, brevissimis, flavis vel fusco-cinereis vestitus; piceus, antennis, pedibus, bucca, prothoracis elytrorumque marginibus reflexis rufo-castaneis. Tertius articulus antennarum tam elongatus quam simul quatuor sequentes. Caput transversum, antice late rotundatum, subdense et haud valide punctatum, oculis brevissime setosis. Prothorax transversus, antice quam postice angustior, in disco sat dense umbilicato-punctatus, ad latera granosus; margine antico medio arcuato et sat late subpulvinate, utrinque antice abrupte reflexo, angulis anticis acutis, antrorsum productis; lateribus arcuatis, late explanatis; angulis posticis obtusis; basi medio arcuata, utrinque late

sinuata, sat profunde striato-marginata. Scutellum transversum, granosum. Elytra subparallela, ad apicem attenuata et separatim subacuminata, subtenuiter granoso-striata, granis densatis, umbilicatis; intervallis striarum striis multo latioribus; marginibus lateralibus sublate reflexis. — Long. 4,5—5,5 mill.

Oblong, assez large, convexe, un peu brillant, couvert de soies courtes, recourbées en arrière, jaunâtres ou légèrement enfumées; couleur brun de poix, antennes, pattes, devant de la tête et marges latérales du prothorax et des élytres rougeâtres. Troisième article des antennes aussi long que les quatre suivants réunis; dernier article de la massue plus étroit que le précédent, moins long que large. Tête subparallèle, largement arrondie en avant, environ de moitié aussi longue que large au niveau des yeux; ponctuation peu marquée; yeux peu saillants, entaillant modérément le front, un peu moins longs que la moitié de la longueur de la tête, garnis de très courtes soies; bord latéral de la tête légèrement relevé contre les yeux. Prothorax très rétréci en avant, à peine à la base, régulièrement arrondi sur les côtés, très nettement moins de deux fois plus large en avant que la tête, à peine deux fois et demie plus large dans sa plus grande largeur que long au niveau des angles antérieurs, assez densément ombiliqué-ponctué sur le disque, granuleux sur les côtés; bord antérieur profondément échancré, arrondi en avant dans le milieu de l'échancrure, légèrement relevée en bourrelet; angles antérieurs aigus, fortement saillants; marges latérales largement explanées, concaves; angles postérieurs obtus; base arrondie dans le milieu, largement sinuée de chaque côté, bordée très étroitement par une strie profonde. Ecusson transversal, granuleux. Elytres un peu plus larges à la base que le prothorax, subparallèles jusqu'au deuxième tiers de la longueur, puis atténués et subacuminés séparément au sommet, environ deux fois aussi longs que larges ensemble, largement explanés sur les côtés, striés-granuleux, granulations serrées, petites, ombiliquées; intervalles des stries environ trois fois plus larges que celles-ci.

Hab. Birmanie: Bhamo (Fea). — Collections du Musée de Gênes et A. Grouvelle.

**Tableau des Colobicus vrais
de l'Asie et de la région Indo-Malaise.**

- | | |
|--|-------------------------|
| 1. Troisième article des antennes au moins aussi long que les trois suivants réunis (<i>Colobicus</i> vrais). | 2 |
| » Troisième article des antennes plus court que les trois suivants réunis (n. subg.). | |
| 2. Une ligne de points bien marqués sur chaque intervalle des stries ponctuées des élytres | <i>amplus</i> Grouv. |
| » Pas de ligne de points bien marqués sur les intervalles des stries des élytres. | 3 |
| 3. Une ligne de soies squamiformes d'un gris clair sur les intervalles alternes des stries des élytres | <i>decoratus</i> Grouv. |
| » Tous les intervalles décorés de la même manière de soies squamiformes . . . | 4 |
| 4. Un groupement de poils squamiformes sur les épaules | <i>marginatus</i> Latr. |
| » Epaules sans poils squamiformes . . | 5 |
| 5. Elytres moins d'une fois et demie aussi longs que larges ensemble | <i>latus</i> Grouv. |
| » Elytres près ou plus de deux fois aussi longs que larges ensemble | 6 |
| 6. Saillie des yeux ne dépassant pas l'alignement du bord latéral antérieur de la tête; soies uniformément cendrées. | <i>ornatus</i> Grouv. |
| » Saillie des yeux dépassant l'alignement du bord latéral antérieur de la tête. | 7 |
| 7. Soies des élytres uniformément foncées. | <i>uniformis</i> Reitt. |
| » Soies des élytres en partie cendrées. . | 8 |
| 8. Elytres environ deux fois aussi longs que larges ensemble; intervalles des | |

- stries des élytres environ trois fois plus
larges que les stries *gigas* Grouv.
8. Elytres nettement plus de deux fois
plus longs que larges ensemble 9
9. Stries plus fortes; intervalles environ
deux fois plus larges que les stries *parilis* Pasc.
- » Stries plus fines; intervalles environ
trois fois plus larges que les stries. *indicus* Motsch.

**Catalogue des Colobicus
de l'Europe, de l'Asie et de l'Australie.**

Colobicus Latr. 1807, Gen. Crust. Ins. II, p. 9. — Erichs. 1845, Naturg. Ins. Deutschl. III, p. 276. — Sturm, 1849, Deutschl. Fn. Ins. XX, p. 22. — Lacord. Gen. Col. II, p. 365. — Jacq. Duv. 1857—1859, Gen. Col. d'Eur. II, p. 171. — Reitt. 1881, Verhandl. Nat. Ver. Brünn, XX, p. 125. — Ganglb. 1899, Käf. Mitteleur. III, 2, p. 857.

COLOBICUS VRAIS.

- marginatus* Latr. 1807, p. 10, pl. 16, fig. 1. — Ganglb. 1899, p. 859 Europe, Sibérie,
Japon.
- emarginatus* Erichs. 1845, p. 268. — Sturm, 1849,
p. 25, pl. 364, fig. A. — Jacq. Duv. 1857—1859,
pl. 44, fig. 217. — Reitt. 1881, p. 128. — Sharp,
1885, Journ. Linn. Soc. Lond. XIX, p. 61.
- axillaris* Duftschm. Fn. Austr. III, p. 155.
- hirtus* Brullé, Hist. Nat. Ins. V, p. 410.
- parilis* Pasc. 1860, Journ. of Ent. I, p. 102; 1863, II, p. 123 Inde, Birmanie,
Indo-Chine, Ar-
chip. Malais.
- conformis* Pasc. 1863, Journ. of Ent. II, p. 124.
- indicus* Motsch. 1863, Bull. Moscou, II, p. 503. Ceylan.
- uniformis* Reitt. 1877, Mittheil. München. Ent. Ver.
I, p. 132. Indes Orientales.
- gigas* Grouv. 1908, Notes Leyden Mus. XXX, p. 119. Birmanie.
- ornatus* Grouv. 1908, loc. cit. p. 116. Sumatra.
- latus* Grouv. 1908, loc. cit. p. 118. Sumatra.
- decoratus* Grouv. 1908, loc. cit. p. 115. Moluques.
- amplus* Grouv. 1908, loc. cit. p. 114. Sumatra.

NOV. SUBGEN.

- rugosulus* Pasc. 1863, Journ. of Ent. II, p. 123. Ceylan, Inde mér.
- limbatus* Pasc. 1863, loc. cit. p. 124. Sarawak.
- granulosus* Sharp, 1885, Journ. Linn. Soc. London,
XIX, p. 65. Japon.

Paris, Juillet 1908.

Notes from the Leyden Museum, Vol. XXX.

NOTE XVI.

DEUX HYMÉNOPTÈRES NOUVEAUX DE JAVA

PAR

R. DU BUYSSON.

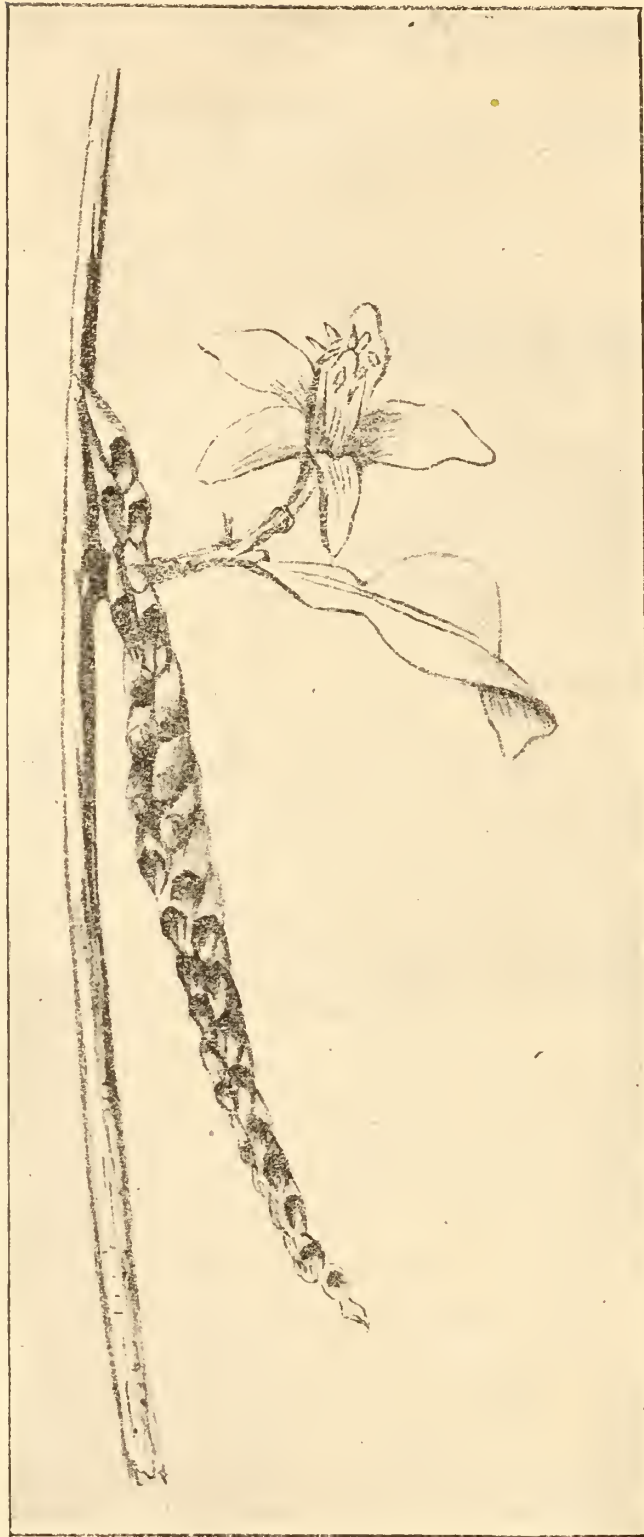
Parmi les Hyménoptères que M. Edward Jacobson a eu l'amabilité de récolter à mon intention, il se trouve deux espèces inédites dont voici la description.

Icaria Jacobsoni, n. sp.

Femelle et ouvrière. — Corps petit, trapu, robuste; roux-ferrugineux avec le milieu de la face et du vertex, le mésonotum, le tergite du segment médiaire et le grelot de l'abdomen, noirâtres; une large bordure antérieure sur le clypéus, les orbites internes à partir du sinus des yeux, le devant du scape, le bord antérieur du pronotum, les écailles, deux taches antérieures sur l'écusson, deux petites sur les angles du postécusson, deux taches allongées sur le segment médiaire, le devant des hanches, une marge sur les segments abdominaux 2 à 5, une tache de chaque côté de la base du 2^e tergite abdominal, jaunes. Thorax trapu, largement tronqué antérieurement; ailes hyalines, les antérieures avec une tache très nette, noire, à l'extrémité de la cellule radiale. Abdomen avec le pétiole court, renflé en dessus, le renflement se faisant assez brusquement, mais sans repli, le bord apical droit, non canaliculé; grelot de l'abdomen un peu allongé, la bordure du 2^e tergite canaliculée. — Long. 6—7 mill.

Parfois la couleur rousse envahit le mésonotum et presque la moitié antérieure du grelot de l'abdomen; l'écusson et

le postécusson peuvent être entièrement jaunes, le clypéus



Nidification de l'*Icaria jacobsoni*
(grandeur naturelle).

allongé, mais dont le ou les pédoncules sont en dessus,

également mais avec une ligne brune en son milieu; les cuisses antérieures et intermédiaires, de même que le dessus des tibias peuvent être rayés de jaune. Le dessous des antennes, toujours d'une teinte plus claire que le dessus, est parfois presque jaunâtre.

Le mâle est inconnu pour le moment.

Cette espèce est très voisine de l'*I. variegata* Smith, dont elle copie la livrée, mais elle s'en distingue de suite par la forme du pétiole abdominal dont le rebord apical n'est point canaliculé, la partie postérieure bien plus convexe et la base sans repli.

La nidification est très différente. L'*Icaria variegata* Sm. construit un gâteau plus ou moins disciforme, irrégulier,

dans un plan différent de celui des alvéoles. *L'I. Jacobsoni* place ses alvéoles deux par deux seulement, en série, de manière que le gâteau est linéaire, en forme de ruban quand il est très grand. Le fond du premier alvéole porte le pédoncule qui se trouve ainsi dans le plan du gâteau.

M. Paul Serre, vice-consul de France, a découvert cette espèce avec sa nidification aux environs de Batavia en 1904 et 1905. M. Edward Jacobson l'a reprise à Java également, à Moeara Antjol, en décembre 1907 et février 1908. Les nouveaux matériaux recueillis par M. Jacobson m'ont permis de reconnaître cette espèce d'une façon définitive.

Le nid, dont la figure accompagne cette note, m'a été envoyé par M. Jacobson et ne doit pas être à son complet développement. M. Serre m'en a récolté de beaucoup plus grands; un, entre autres, mesure 22 centimètres et contient 111 alvéoles, bien que l'extrémité soit brisée et perdue.

Chrysis Jacobsoni, n. sp.

Corps de taille médiocre, allongé, subparallèle, d'un beau vert-bleu avec une tache sur le vertex, deux sur le pronotum, l'aire médiane du mésonotum, les écailles et le disque des trois tergites abdominaux, bleu foncé vif. Tête globuleuse, de la largeur du thorax, cavité faciale courte, large, terminée en haut par une carène transversale triangulaire; joues nulles; antennes noirâtres, les trois premiers articles verts, le 3^e plus long que le 4^e; pronotum rectangulaire, les angles antérieurs subaigus, les côtés subparallèles; ailes très légèrement enfumées avec une tache brune dans la cellule radiale; mésopleures normales; pattes concolores, tarses noirâtres, le 1^{er} article teinté de vert en dessus. Ponctuation de la tête et du thorax réticulée, assez grosse, ruguleuse. Abdomen allongé, à ponctuation réticulée, médiocre; 2^e tergite caréné, les angles postérieurs arrondis; 3^e tergite caréné, arrondi, comprimé légèrement sur les côtés; série antéapicale remplacée par une simple dépres-

sion sans fovéoles; marge apicale assez large, très entière, les côtés arrondis, sans angle distinct. Ventre vert.

♀. — Long. 7 mill. — Batavia, octobre 1907.

Je dédie ces deux Hyménoptères à M. Jacobson, en reconnaissance des travaux de biologie qu'il a bien voulu entreprendre à mon intention. Les types de l'*Icaria* sont conservés dans les collections du Muséum de Paris et du Musée de Leide; l'unique exemplaire de *Chrysis Jacobsoni* se trouve au Muséum de Paris.

Paris, septembre 1908.

NOTE XVII.

ON A NEW SPECIES OF CHALCOPSITTA
FROM N. W. NEW GUINEA

by

Dr. E. D. VAN OORT.

This magnificent new species of the genus *Chalcopsitta*, which I describe here under the name of

Chalcopsitta spectabilis, nov. sp.

is nearly allied to *Chalcopsitta insignis* Oustalet; it differs however in many respects from this species and shows at the same time some relation to *Chalcopsitta scintillatus* (Temminck).

Forehead, lores and upper parts of the cheeks red; head and neck black; lower cheeks and throat black with a red tinge; elongated feathers of the hind neck and upper back purplish black with greenish yellow shaftstreaks; back and wings dark greenish brown, the smaller wing-coverts with dark edges, near the bend of the wing the feathers violet; rump bright blue; upper tailcoverts dark green; tailfeathers above olive-green with violet tips, underneath olive-yellow with red bases; breastfeathers dark violet with red bases and some of the lower ones with yellow shaftstreaks; abdomen and under tailcoverts dark green; tibiae red; feathers of the sides of the body red with green or violet apical parts; underwingcoverts

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red, some feathers with violet extremity; quills underneath dusky, bases of innerwebs bright yellow with orange margins; bill black, legs blackish; wing 176, tail 122, culmen 21, tarso-met. 21 mm.

The bird is a male and collected by Laglaize 13 March 1876 at Mambrioe, N. W. New Guinea. It has been purchased from A. A. Bruyn in 1878.

Leyden Museum, June 1908.

NOTE XVIII.

CONTRIBUTION TO OUR KNOWLEDGE OF THE
AVIFAUNA OF THE NETHERLANDS,BEING A LIST OF ALL THE SPECIES OF BIRDS HITHERTO
OBSERVED, WITH SPECIAL
REFERENCES TO SPECIMENS IN THE LEYDEN MUSEUM

BY

Dr. E. D. VAN OORT.

(With 2 plates).

Though the specimens in our general ornithological collection, for the greater part collected before and at the time that the late Professor H. Schlegel interested himself much in the knowledge of the birds of the Netherlands — that is before 1865 —, in addition with those of the fine collection of stuffed birds, brought together by the late Mr. J. P. van Wickevoort Crommelin, all captured in the Netherlands and received by the Museum in 1893, form for many of the species a scientific material, I however acquired the experience, when taking the care of the Birds-collection of our Museum in 1904, that many other species, even some of the commonest ones, were represented in an insufficient manner, so that it was impossible to make a somewhat serious study with the aid of this material. Moreover all the specimens of the old collection are stuffed, series of twenty and more examples of the same species. These stuffed birds are very unmana-

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geable for comparative examination and many of them are spoiled because they were exposed during tens of years in bad cases, open to daylight, dust and mould. It is a matter of course, that in a museum must be a collection of well-stuffed specimens for the general public, but three or four specimens in different plumage or age of each species are in most cases more than sufficient; the rest of the material, being by far the largest part and the true scientific material, must be preserved as skins, not be exposed to the general public, but open only to students of ornithology.

A skin-collection of indigenous birds was absolutely wanting in our Museum and as completing and enlarging of our collection of native birds was very necessary, I entered in relation with collectors in different parts of our country and had till yet the satisfaction, that many specimens, and among them some very interesting ones, came in the Museum and that gradually the base of an up-to-date skin-collection of our native birds is formed.

Special thanks for more or less important donations are due to the following gentlemen: D. Bakker, Dr. J. F. van Bemmelen, E. Blaauw, F. E. Blaauw, J. Boonstra, J. M. Bottemanne, E. J. M. de Bruyn, Mr. J. J. Clotterbooke Patijn van Kloetinge, J. Daalder Dz., R. van Eecke, J. van Essen, W. J. Heyligers, G. Kniphorst, Mr. H. Kuipers, H. Leyborne Popham, J. Molenaar, A. A. van Pelt Lechner, T. M. Pike, G. Polvliet, C. A. L. Smits van Burgst, Mr. R. Baron Snouckaert van Schauburg, G. S. van der Spruyt, C. N. Tieleman, F. A. Verster van Wulverhorst, F. H. Verster, J. Wurfbain and Mr. R. Baron van Zuylen van Nijvelt.

I hope these gentlemen will continue in bestowing our collection with interesting birds and also I hope that still many other ones will follow their example and will help to make our collection as good as possible and worthy to be the National Collection.

Our present government fortunately is also watchful of the interests of science and of our Museum, but at the same time watchful of the interests of the birds of our

country; everyone will be thankful for the Royal warrant of July 18th 1908, by which an end was put to the horrible slaughter among the terns on our coast. We may hope, that the protection of our birds becomes continually more general, so that finally every bird is protected, at least during its breedingperiod.

In the following lines I have given a list of all the species of birds observed with certainty in the Netherlands. Special mention is made of the occurrence of rarer birds, also I have given some remarks on more common species, based however only upon the material in the collections of the Leyden Museum of Natural History and chiefly concerning birds, received from 1 September 1904 till 1 September 1908, while some acquisitions of former days are mentioned also. Behind the scientific names I have placed in brackets the popular name, under which the bird is commonly known in the Netherlands; this will be useful to the general reader in our country, who is not familiar with the latin names. The number of the specimens received in the four years is mentioned at each species.

The birds of the Collection van Wickevoort Crommelin are indicated with the number, that each object bears and that agrees with the numbers in the Manuscript Catalogue of van Wickevoort Crommelin, as well as with those in the printed Catalogue of this collection edited by Dr. Jentink (Mus. d'Hist. nat. Pays-Bas, XIV, 1894). The nomenclature in the latter catalogue is not that of van Wickevoort Crommelin.

PODICIPEDIDAE.

1. *Podiceps cristatus* (L.). [FUUT].

We received 20 specimens in different plumage. There is in the collection an albino of this species, killed in Holland and purchased in 1866 from the Cabinet van Lidth de Jeude (Schlegel, Cat. Urinatores, *Podiceps cristatus*, n^o. 10). The upperparts in this example have a light brown tinge.

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A male, shot 18 November 1864 in the province of Noord-Holland, making part of the Collection van Wickevoort Crommelin (294—5) is interesting by the pale coloration of the upper parts.

2. *Podiceps grisegena* (Boddaert). [ROODHALSFUUT].

Since 1904 we received only three specimens, killed in the neighbourhood of Leiden, being an old male and an old female from the Kagermeer, 22 September 1905, and a young female from Zoeterwoude, 16 October 1906.

3. *Podiceps auritus* (L.). [KUIFDUIKER].

In the latter four years the Museum received three specimens in winter plumage, killed in the vicinity of Leiden, viz.: ♂, 24 January 1905, Nieuwkoop; ♀, 19 October 1905, Kagermeer; ♀, 15 November 1907, Zoeterwoude. In our collection are five specimens in full summer dress: four in the collection van Wickevoort Crommelin (296—1, 3, 5 and 8) and one in our old collection, presented by the late van Wickevoort Crommelin in 1856 (Schlegel, Cat. Urinatores, *Podiceps cornutus*, n^o. 2).

4. *Podiceps nigricollis* Brehm. [GEOORDE FUUT].

This species the Museum did not receive in the latter years. We possess altogether ten specimens from Holland, among which are four specimens in full summer plumage, two in the collection van Wickevoort Crommelin (297—1 and 3) and two in our old collection (Schlegel, Cat. Urinatores, *Podiceps auritus*, nos. 2 and 3).

5. *Podiceps fluviatilis* (Tunstall). [HAGELZAKJE].

We received 13 specimens, only one in breeding plumage. Of this species, our commonest grebe, the Museum possesses only very few examples in full dress, altogether only six. Specimens in this dress from Holland are very welcome to our collection.

COLYMBIDAE.

6. *Colymbus imber* Gunnerus. [IJSDUIKER].

This species is the rarest of the genus in Holland. Specimens in full dress are extremely rare and I believe that the male, killed 15 May 1856 on the island of Wieringen in the Zuiderzee, in the possession of our Museum (Coll. van Wickevoort Crommelin, 301—1) is the only specimen in full dress having been killed in the Netherlands. The two specimens mentioned in Schlegel's Catalogue (Cat. Urinatores, *Colymbus glacialis*, nos. 1 and 2) have not been killed with certainty on our shore.

7. *Colymbus arcticus* L. [PARELDUIKER].

This diver is less rare than the foregoing, although examples in full plumage are far from common. We received since 1904 four specimens in winter dress, one of them, a male from Leiderdorp, province Zuid-Holland, 12 January 1905, with some feathers of the summer plumage on the back. In the collection of the late van Wickevoort Crommelin are two specimens in full summer plumage (300—1 and 4) and in our old collection one (Schlegel, Cat. Urinatores, *Colymbus arcticus*, n^o. 2).

8. *Colymbus stellatus* Brünnich. [ROODKEELZEEDUIKER].

Young specimens of this species are every winter tolerably common, adult ones are rarer.

Since 1904 we received 16 specimens in winter plumage, only one specimen showing traces of the red throat. One specimen, a male in winter dress, was shot on Texel, 29 May 1906. Only one specimen in the collection van Wickevoort Crommelin (299—7) is in perfect summer plumage, while in the Museum's old collection there are two specimens in this dress from our country (Schlegel, Cat. Urinatores, *Colymbus septentrionalis*, n^{os}. 1 and 2).

PROCELLARIIDAE.

9. *Fulmarus glacialis* (L.). [NOORDSCHE STORMVOGEL].

This is a rare visitor to Holland. Most of the specimens are killed in the cold season after stormy weather. Last year, however, a female was captured alive on the Vliehors near Texel on the 23rd July. The primaries of the right wing had not attained their full length, so that the bird was not able to fly.

10. *Procellaria pelagica* L. [STORMVOGELTJE].

This species has become in later time in Holland much rarer than formerly, when it was commoner than the next species. In 1863 Schlegel recorded in the Catalogue of the Procellariae three specimens killed in Holland and no specimen of *Oceanodroma leucorhoa*. In the collection van Wickevoort Crommelin are 6 examples of *pelagica* and only 2 of *leucorhoa*. The Museum has not received this species during the last four years.

11. *Oceanodroma leucorhoa* (Vieillot). [VAAL STORMVOGELTJE].

We received eleven examples viz.:

- ♀, October 1904, Hornhuizen, Groningen. (Preserved as skeleton).
- ♂, November 1904, near 's Gravenhage. (Preserved as skeleton).
- ♀, 28 November 1904, Pieterburen, Groningen.
- ♂, 12 December 1904, coast of Groningen.
- ♂, 9 October 1905, Scheveningen.
- ♀, January 1906, coast of Groningen.
- ♀, October 1906, coast of Groningen.
- ♂, 13 November 1906, Westernieland, Groningen.
- ♂, 5 December 1906, coast of Groningen.
- ♀, 10 December 1906, Hornhuizen, Groningen.
- ♀, 21 November 1907, Westernieland, Groningen.

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12. *Puffinus puffinus* (Brünnich). [NOORDSCHE PIJLSTORMVOGEL].

This species is recorded by Temminck as having been captured in Holland. We have in the collection the two types of *Procellaria anglorum* Temminck (Man. d'Orn. 2^e éd. II, 1820, p. 806), one originally labelled by Temminck »*Puffinus anglorum*, Europe" and the other one »*Puffinus anglorum*, Europe sept."; these localities have been changed by Schlegel into „Mer du Nord" (Cat. Procellariae, *Procellaria anglorum*, n^{os}. 1 and 2). Specimens obtained in our country are not known to me ¹).

13. *Puffinus grisea* (Gmelin). [GRAUWE PIJLSTORMVOGEL].

This species is not represented in our collection of indigenous birds. An old male, captured 15 October 1900 at Hornhuizen, province of Groningen, is in the possession of Baron R. Snouckaert van Schauburg (Tijdschr. Ned. Dierk. Vereen. VII, 1902, p. 43).

SULIDAE.

14. *Sula bassanus* (L.). [JAN VAN GENT].

We received three adult specimens, viz. a ♀ captured alive 7 October 1905 near Noordwijk, a ♀ killed 15 November 1907 on the Zuiderzee and a ♀ killed 30 January 1908 near den Helder. It seems that young specimens are at present much rarer than in former days.

PHALACROCORACIDAE.

15. *Phalacrocorax carbo* (L.). [SCHOLLEVAAR].

A pale brown variety of this species was received 19 October 1905. It had been killed on the Kagermeer the

1) *Puffinus obscura* (Gmelin) is placed wrongly on the list of the birds of Holland by Schlegel. Out of Temminck's statements (Man. d'Orn. 2^e éd. II, 1820, p. 808; IV, 1840, p. 510) is not to read, that an example has been killed in our country.

C. Nozeman (Nederlandsche Vogelen, IV, 1809, p. 369) gives under the name of *Procellaria puffinus*, B. Linn. the description and a coloured plate of a *Daption capensis* (L.), which was said to have been killed some years before near Sloterdijk, Noord-Holland.

day before. It is a female of very small size. Head, neck, rump, tail, primaries and sides of body are pale brown, back and wingcoverts whitish brown, breast and vent white. Iris grey, bill light brown-grey, naked skin yellow, feet light brown, nails brown-grey. Total length about 730, wing 320, tail 150, bill 63 mm.

We received further 13 specimens, young and adult ones, but no specimens in breeding plumage.

16. *Phalacrocorax graculus* (L.). [GEKUIFDE SCHOLLEVAAR].

Our Museum received a young female, shot 7 October 1905 near the island of Texel, and an adult male with fully developed crest, killed on the seashore between den Helder and Callantsoog, 1 May 1908.

We have still another specimen of this bird killed in Holland, viz.: a young female captured 25 February 1860 near Rotterdam (Schlegel, Cat. Pelecani, *Graculus cristatus*, n^o. 6).

ARDEIDAE.

17. *Ardea cinerea* L. [BLAUWE REIGER].

We received 14 examples in different ages. The Museum possesses an adult male in which one of the lengthened occipital plumes is white instead of black (Schlegel, Cat. Ardeae, *Ardea cinerea*, n^o. 1, figured by Schlegel, Vogels van Nederland, 1854—58, pl. 186).

18. *Ardea purpurea* L. [PURPERREIGER].

The Museum purchased only three examples, viz.: young ♂, 5 September 1905, de Kaag, Zuid-Holland; adult ♂, 11 May 1906, Bennebroek, Noord-Holland; young ♂, 31 July 1906, de Kaag.

19. *Herodias alba* (L.). [GROOTE ZILVERREIGER].

We possess only one specimen, a female, shot 2 February 1855 near Zutphen (Coll. van Wickevoort Crommelin, 213—1).

20. *Garzetta garzetta* (L.). [KLEINE ZILVERREIGER].

This species is not represented in the collection by an example shot in our country. One indigenous example was preserved in the University Museum of Groningen, burnt in 1906; another was killed in July 1901 near Gennep, province Limburg (Snouckaert, Tijdschr. Ned. Dierk. Vereen. VII, 1902, p. 271).

21. *Nycticorax nycticorax* (L.). [KWAK].

The night-heron is at the present time very rare in Holland. We possess three specimens: an adult one, only labelled »Holland'' (Schlegel, Cat. Ardeae, *Ardea nycticorax*, n^o. 1), a young male, shot in September 1849 in Holland, without exact locality (Schlegel, *ibid.* n^o. 2) and a young male killed 19 August 1861 in the province Zuid-Holland (Coll. van Wickevoort Crommelin, 218—3).

22. *Ardeola ralloides* (Scopoli). [RALREIGER].

Two specimens are in our collection: an adult specimen, shot at the Kralingermeer near Rotterdam, purchased from the Cabinet van Lidth de Jeude (Schlegel, Cat. Ardeae, *Ardea comata*, n^o. 1) and an adult one, shot on the Scholle-vaarseiland, July 1860 (Coll. van Wickevoort Crommelin, 215—1).

23. *Ardetta minuta* (L.). [WOUDAAPJE].

In the latter years the Museum received four specimens: young ♂, 14 August 1906, Kagermeer, prov. Zuid-Holland; adult ♀, 25 September 1906, Aalsmeer, prov. Noord-Holland; adult ♀, 15 August 1907, Leimuiden, prov. Zuid-Holland; young ♂, 7 August 1908, Zoeterwoude, prov. Zuid-Holland.

24. *Botaurus stellaris* (L.). [ROERDOMP].

It is a remarkable fact, that among the specimens preserved in our collection are much more males than females.

In our old collection are among 14 specimens only one female and an unsexed specimen, the rest are males. In the collection van Wickevoort Crommelin are three specimens, two males and one female. In my time we received ten specimens, being seven males and three females.

CICONIIDAE.

25. *Ciconia ciconia* (L.). [OOIEVAAR].

We received a young male and a young female of about four weeks of age, taken from the nest 10 June 1906 at Hintham near 's Hertogenbosch.

26. *Ciconia nigra* (L.). [ZWARTE OOIEVAAR].

We possess three specimens killed in Holland, two young ones from Hoek van Holland, August 1859 (Schlegel, Cat. Ciconiae, *Ciconia nigra*, n^o. 3, and the specimen in the collection van Wickevoort Crommelin, 210—1) and a young female from Zandvoort, 21 August 1884 (Coll. van Wickevoort Crommelin, 210—2).

IBIDAE.

27. *Plegadis falcinellus* (L.). [IBIS].

We possess an adult specimen, labelled by Temminck »tué en Hollande'' (Schlegel, Cat. Ibis, *Ibis falcinellus*, n^o. 2) and a young female, killed 30 October 1873 at Zwartsluis, province Overijssel (Collection van Wickevoort Crommelin, 207—2).

28. *Platelea leucorodia* L. [LEPELAAR].

We received a young male and a young female, killed 9 August 1906 on Texel. In the old collection is a young male shot 3 December 1862 near Leiden, and in the collection van Wickevoort Crommelin is a young female shot 27 February at Hoek van Holland. We possess a fine

series of this species, which is fortunately still breeding in our country ¹⁾).

ANATIDAE.

29. *Cygnus cygnus* (L.). [WILDE ZWAAN].

The Museum purchased five specimens, viz.:

- adult ♂, 3 March 1906, Texel;
- adult ♀, 20 December 1906, Texel;
- adult ♂, February 1907, Ierseke, province Zeeland;
- adult ♂, 27 November 1907, Texel;
- young ♀, 7 January 1908, Kagermeer, Zuid-Holland.

30. *Cygnus bewickii* Yarrell. [KLEINE ZWAAN].

In the latter years we did not receive this species. We possess the following specimens captured in our country:

- adult ♂, captured alive in Holland and received 17 July 1855 from the Zoological Garden at Amsterdam (Schlegel, Cat. Anseres, *Cygnus minor*, n^o. 1);
- adult ♀, 15 March 1856, Holland, without exact locality (Schlegel, ibid. n^o. 2);
- adult ♂, 20 March 1858, near Meppel, province Drenthe (Collection van Wickevoort Crommelin, 237—1);
- adult ♀, 16 December 1882, Angerlo near Doesburg, province Gelderland. Presented by Dr. R. Horst.

31. *Cygnus olor* (Gmelin). [KNOBBELZWAAN].

It will be always very difficult to state, if the specimens shot in our country are wild birds or domesticated ones. The so-called *Cygnus immutabilis* Yarrell is without doubt a race arisen in captivity. True *C. olor* we did not receive; only two specimens of the variety *immutabilis*, an adult female shot

1) In the beginning of December 1906 an example of *Phoenicopterus roseus* Pallas has been shot near Hindeloopen in the province Friesland. I have not inserted this species in the list, because we have to do, very probably, with a bird escaped from captivity. I have not seen the bird, but, judging from the descriptions, it must be the named species.

near Rijpwetering, Zuid-Holland, 1 June 1906, and an adult male shot on Texel, 20 July 1906.

32. *Chen hyperboreus* (Pallas). [SNEEUWGANS].

This species has been only seen in our country; till yet no specimen has been shot or captured.

33. *Anser anser* (L.). [GRAUWE GANS].

Till a short time since a few pairs of this species were breeding in Friesland, which seems to be at present not more the case. The Museum received two old males, both killed on Texel, 12 March and 2 April 1906.

34. *Anser brachyrhynchus* Baillon. [KLEINE RIETGANS].

This species is with *A. fabalis* the most common goose on migration. We received the following specimens:

♀, February 1905, Warmond;

♂♂♂, 13 December 1905, Veeregat, Zeeland, presented by Messrs. T. M. Pike and H. Leyborne Popham;

♂, 24 January 1906, coast of Groningen;

♂, 20 November 1906, Westernieland, coast of Groningen; young ♀, 28 November 1906, Texel; in this example the

lower fore part of the legs had a yellow tinge;

♀, 10 November 1907, Westernieland, Groningen; also in this example the lower fore part of the legs was yellowish;

♂, 14 January 1908, Noordwijk, province Zuid-Holland.

The above mentioned females dated 28 November 1906 and 10 November 1907 are true *brachyrhynchus*, their legs having only an abnormal coloration on the lower parts. They have nothing to do with the so-called *Anser carneirostris* Buturlin, which is in my opinion a variation of *Anser fabalis*; a specimen of this variation has been shot by the late Mr. T. M. Pike in our country, in the province Zeeland, 17 February 1903 (Alphéraky, the Geese of Europe and Asia, 1905, p. 120).

35. *Anser fabalis* (Latham). [RIETGANS].

It is impossible to me to draw a well defined line between *A. fabalis* and *A. f. arvensis* Brehm [AKKERGANS]; there are all kinds of variation in the shape, length and coloration of the bill and the white surrounding of the bill, which all are only individual. We have a large number of bean-geese shot in our country, 20 stuffed specimens and 9 skins received in the latter years, which belong all to one species: *Anser fabalis* (Latham).

36. *Anser erythropus* (L.). [DWERGGANS].

We did not receive this species in the latter time. The Museum possesses the following specimens captured in our country: adult ♀, 13 January 1865, Overijssel (Coll. van Wickevoort Crommelin, 230—1); young ♀, 7 January 1870, near Rotterdam; adult ♀, 3 November 1873, Overijssel (Coll. van Wickevoort Crommelin, 230—2); adult ♂, 6 November 1873, Overijssel (Coll. van Wickevoort Crommelin, 230—3); young ♀, 16 October 1899, Eemnes, province Utrecht, presented by Mr. F. E. Blaauw, November 1899; young ♂, captured in Friesland. Purchased from the Zoological Garden at Rotterdam, February 1902.

37. *Anser albifrons* (Scopoli). [KOLGANS].

Also this species we did not receive in the latter years, though it is a common winter visitor. The *Anser pallipes* de Selys syn. *Anser albifrons roseipes* Schlegel seems to be a domestic race of this species, as specimens bred in captivity often have pale red feet. According to Mr. F. E. Blaauw (N. L. M. XV, 1893, p. 216) the latter is a hybrid between *A. albifrons* and *A. anser* bred in semi-confinement by the goose catchers.

38. *Branta ruficollis* (Pallas). [ROODHALSGANS].

In the collection is only one specimen from our country,

a young male without date, captured near Rotterdam and presented by H. Schlegel (Schlegel, Cat. Anseres, *Anser ruficollis*, n^o. 2).

39. *Branta leucopsis* (Bechstein). [BRANDGANS].

The Museum received a young female shot 1 February 1907 on Texel, and one old male, two old females, two young males and a young female shot on the Ooster Schelde, Zeeland, 2 March 1907, and presented by the late Mr. T. M. Pike.

Though not a wild shot bird, yet I will mention here the interesting hybrid between *Branta leucopsis* and *Anser albifrons*, bred in the Zoological Garden at Amsterdam, preserved in our collection (Schlegel, Cat. Anseres, *Anser leucopsis*, n^o. 8).

40. *Branta bernicla* (L.). [ROTGANS].

We received 17 specimens.

41. *Branta bernicla glaucogaster* (Brehm). [WITBUIKROTGANS].

Of this light-bellied form we possess three specimens killed in our country, all three adult ones with no white or whitish edging to the wingcoverts, viz.:

♀, labelled only Holland (Schlegel, Cat. Anseres, *Anser bernicla*, n^o. 4);

♀, 20 February 1861, Overijssel (Schlegel, *ibid.* n^o. 5);

♀, 2 February 1861, Wieringen (Collection van Wickevoort Crommelin, 235—4).

42. *Branta canadensis* (L.). [CANADAGANS].

In the collection are two adult males, which have been shot 22 July and 28 July 1876 in the Anna Paulowna-polder, province Noord-Holland, and which are presented by Jhr. Mr. D. van Foreest. The bird is observed on several occasions in our country, but it is doubtful whether these are real wild birds or such escaped from captivity.

43. *Tadorna tadorna* (L.). [BERGEEND].

The Museum received 9 adult males and females from Hoek van Holland, Texel and the coast of Groningen, and a young female shot 8 August 1905 at Leimuiden, Zuid-Holland.

44. *Casarca casarca* (L.). [KASARKA-EEND].

The Museum possesses a fine adult male, shot 6 October 1869 at Waardenburg, province of Gelderland. The late van Wickevoort Crommelin has mentioned this bird in the »Archives Néerlandaises des sciences exactes et naturelles», tome IV, 1869, p. 394. I don't believe the bird is escaped from captivity, as wings and feet are in best condition. The bird has been observed moreover in Germany, Sweden, Denmark and England.

45. *Anas boschas* L. [WILDE EEND].

We purchased a male, shot 20 April 1906 at Aalsmeer, Noord-Holland, in which the chestnut-brown colour of the breast is continued along the sides of the body, while some scapulars are also partly chestnut. The under surface is almost white, the vermiculation nearly invisible. The back is black, vermiculated with brownish and the wingcoverts greyish brown, vermiculated and edged with white. Further we purchased 20 males and females in different stages of plumage.

Hybrid between *Anas boschas* L. \times *Nettion crecca* (L.).

A fine male hybrid between these species I received last year; it has been killed near Ellemeet on Schouwen, province Zeeland, 9 November 1907.

Crown of head and hindhead dark chestnut-brown with obsolete transverse black streaks, round and behind the eye green, sides of the face and of the neck light brown; chin light brown with a few black spots, throat and fore neck and the lower neck all around greenish black; upper surface as in *crecca* but more minutely vermiculated, rump and

upper tailcoverts as in *boschas*, tailfeathers not recurved; wingspeculum green as in *crecca*, the greater wingcoverts as in *boschas*, but with small lightbrown edgings; elongated scapulars as in *boschas* but more brownish, not black and white as in *crecca*; breast chestnut-brown with black spots; vent and sides of body greyish, vermiculated with black as in *crecca* (not so minutely as in *boschas*); under tailcoverts black with a pale buff patch on each side; under wingcoverts pure white; iris dark brown; bill black, sides of the upper jaw yellowish olive, lower jaw ochre-yellow with black spots; legs and feet pale orange with blackish webs and nails; total length in flesh 540, wing 275, tarso-met. 42, bill 50 long and 20 mm. broad.

In the collection van Wickevoort Crommelin (241—12) is a male hybrid between these two species, agreeing with the above described one; this bird has been shot 10 March 1868 in the province Gelderland.

The bird mentioned by van Wickevoort Crommelin and by Schlegel as being a hybrid between the two above named species (van Wickevoort Crommelin, Ned. Tijdschr. Dierk. II, 1865, p. 294; Schlegel, Cat. Anseres, *Anas boschas*, n^o. 30) is a sterile female of the domestic race, assuming partly the male plumage.

Hybrid between *Anas boschas* L. \times *Spatula clypeata* (L.).

A male hybrid between these species, caught in the province Zuid-Holland near Rotterdam, 12 February 1861, is in the collection van Wickevoort Crommelin (241—5). See the description of this example by van Wickevoort Crommelin, Ned. Tijdschr. Dierk. I, 1863, p. 174¹).

46. *Dafila acuta* (L.). [PIJLSTAART].

We received 14 males and females in different plumage from the vicinity of Leiden and from Texel.

1) In the collection van Wickevoort Crommelin is a hybrid between *Anas boschas* L. and *Netta rufina* (Pallas). This bird is not wild shot, but bred in captivity in the Zoological Garden at Rotterdam.

In the collection van Wickevoort Crommelin is an example, captured at Schagen, Noord-Holland, 2 October 1888 (243—12), labelled by him hybrid of *Anas crecca* and *acuta* (see the description from the hand of van Wickevoort Crommelin in Leverkühn's paper in Journ. für Ornithologie, 1890, p. 212). It is a female and it resembles in every respect the female of *acuta* except in its size; the coloration of the head is also as in *acuta*, not as in *crecca* as Crommelin states. There is even no indication of a green wingspeculum, which in *crecca* both male and female possess and that should be indicated, when one of the parents was a *crecca*. If the bird is really a hybrid, it can be in my opinion only a cross of *acuta* and *querquedula*. The dimensions are: wing 225, tail 95, tarso-met. 28, bill 38 mm.

Hybrid between *Dafila acuta* (L.) \times *Anas boschas* L.

Hybrids of these two species are represented in the general collection by the following examples:

♂, March 1888, Warmond, Zuid-Holland. Presented by Mr. G. S. van der Spruyt.

♂, 10 February 1897, Makkum, Friesland. Presented by Mr. H. Albarda.

♂, 10 January 1907, Ellemeet on Schouwen, Zeeland.

These three specimens resemble the male figured in Naumann's *Vögel Mitteleuropas*, last edition, Bnd. X, Taf. 9, fig. 1. From the third specimen I noticed the colours of the soft parts as: iris dark brown, bill light grey with black tip and a black streak along the middle, lower bill for the greater part black, feet pale orange-yellow.

A fourth specimen of the same hybrid and also a male is received in 1870 from the Zoological Garden at Rotterdam, but it is not mentioned whether it was a wild bird or a specimen bred in captivity.

In the collection van Wickevoort Crommelin are three specimens of this hybrid: a male shot 18 January 1862 near Rotterdam, a male shot 26 January 1866 in the pro-

vince Noord-Holland and a young male shot 26 November 1866 in the same province (241—7, 10 and 11).

Hybrid between *Dafila acuta* (L.) × *Mareca penelope* (L.).

We possess a male hybrid between these species, killed 20 January 1862 at Anjum, province Friesland, and presented by the late Mr. H. Albarda (Schlegel, Cat. Anseres, *Anas acuta*, n^o. 19). This bird is described by the late van Wickevoort Crommelin in Ned. Tijdschr. Dierk. II, 1865, p. 296, as a hybrid of the two named species, but later on (Archives Néerl. Sc. ex. et nat. VII, 1872, p. 135) he supposed the bird to be a hybrid of *Dafila acuta* and *Nettion crecca*. The late Albarda mentioned the bird in his »Aves Neerlandicae” 1897, p. 110, as a hybrid of *Mareca penelope* and *Nettion crecca*. The bird is however without doubt a hybrid between *acuta* and *penelope*.

47. *Chaulelasmus strepera* (L.). [KRAKEEND].

In former days this duck seems to have been more common than at the present time; it is still breeding here in a few numbers and is also on migration not numerous.

I received the following specimens:

adult ♀, 6 September 1905, Nieuwkoop, Zuid-Holland.

young ♀, 6 September 1905, Nieuwkoop.

adult ♂, 17 November 1905, Nieuwkoop.

adult ♂, 25 November 1905, Nieuwkoop.

adult ♂, 31 August 1906, Leimuiden, Zuid-Holland.

young ♀, 29 August 1907, Zoeterwoude, Zuid-Holland.

adult ♀, 9 November 1907, Ellemeet on Schouwen, Zeeland.

adult ♂, 21 November 1907, Aalsmeer, Noord-Holland.

adult ♂, 11 February 1908, Ellemeet on Schouwen.

adult ♂, 21 August 1908, Nieuwkoop.

48. *Mareca penelope* (L.). [SMIENT].

On migration this species is exceedingly numerous, especially near the sea-shore. We purchased several examples

and Messrs. Pike and Popham presented to us a fine series in different plumage, altogether 30 specimens.

49. *Nettion crecca* (L.). [WINTERTALING].

We received 15 specimens. In the collection van Wickevoort Crommelin is a female (if correctly sexed?) — killed at Santpoort, 25 November 1854 (247—3), assuming the male plumage. Another example in the same collection (247—4), a female, shot near Naarden, 14 April 1855, has some white feathers on the forehead, on the head and in the tail, while a female, shot at Beverwijk, 23 October 1876, has a great amount of white in its plumage and shows the interesting fact that the left side is much more whitish than the right one. The green speculum in the right wing is more developed than in the left one, where only one feather is green. Bill and feet are of a paler colour than normal. A male, shot at Uitgeest, 2 October 1891 (Coll. van Wickevoort Crommelin, 247—10), has a small white collar on the foreneck.

Sometimes occur among these teals, as in other ducks, specimens in which the undersurface is strongly ferruginous brown, probably in consequence of their sojourn on ferruginous water. In the collection van Wickevoort Crommelin is such an example, a male, shot 18 August 1857 on the Wijkermeer (247—5). I received such another specimen, a female, killed 14 August 1906 near Leimuiden, Zuid-Holland.

Hybrid between *Nettion crecca* (L.) \times *Dafila acuta* (L.).

A male hybrid of these ducks is in the collection van Wickevoort Crommelin (243—10). The bird was caught 25 February 1868 at Waardenburg, Gelderland, and has lived till 26 December 1870 in the Zoological Garden at Rotterdam. This bird much more resembles *crecca* than *acuta* (see description by van Wickevoort Crommelin, Arch. Néerl. Sc. ex. et nat. VII, 1872, p. 134).

50. *Querquedula discors* (L.). [BLAUWVLEUGELTALING].

The only specimen observed in our country, a male captured near Dokkum, province of Friesland, 24 October 1899, is in the possession of Bn. Snouckaert van Schauburg.

51. *Querquedula querquedula* (L.). [ZOMERTALING].

This teal is very numerous in August and September, when it leaves us; it returns in March. In winter it is rare. Our Museum received in the latter years a fine series of 26 skins in different stages of plumage, all killed in the neighbourhood of Leiden, one of which, a male from Nieuwkoop, 2 August 1905, has its undersurface dark ferruginous brown.

52. *Spatula clypeata* (L.). [SLOBEEND].

We purchased a fine series of 17 skins in different plumage, almost all killed in the neighbourhood of Leiden.

Hybrid between *Spatula clypeata* (L.) \times *Dasila acuta* (L.).

A male hybrid between these species was caught in the province Zuid-Holland (place and date unknown); it has lived till 10 July 1877 in captivity in the Zoological Garden at Rotterdam, when it was purchased by van Wickevoort Crommelin (242—5).

It is difficult in this hybrid to determine which are the parents. *Clypeata* is evident in the shape of the bill and the coloration of the head, the top of the head, however, is mottled as in the male *acuta*. The forepart of the breast is brown like in *penelope*, some of the feathers vermiculated with black; rest of the undersurface as in *acuta*. The back is not unlike an immature *penelope*; the wing shows relations to *clypeata* and *acuta*. The speculum is almost as in *clypeata*, the ferruginous wingbar of *acuta* is here nearly white with only a ferruginous tinge on the apical end. It therefore is very likely that also *penelope* blood is in this hybrid.

53. *Netta rufina* (Pallas). [KROONEEND].

After the specimen, which I have mentioned in vol. XXVI, p. 196 of this periodical, the Museum did not receive another example. We possess 10 specimens from the Netherlands.

54. *Aythia ferina* (L.). [TAFELEEND].

Very common on migration and not rare in winter; found breeding in Noord-Brabant, Friesland and Noord-Holland and I presume it breeds also on the lakes near Leiden. We were presented by Mr. T. M. Pike with and we purchased together 24 specimens in different plumage, respectively from Veere (province Zeeland), the neighbourhood of Leiden and from Texel. An adult male, shot 28 January 1905 at Nieuwkoop, is interesting as to the amount of black on vent and under tailcoverts, not only the under tailcoverts being black, but also the abdomen is nearly black, only sparingly vermiculated with grey; also the black of the breast has a greater extension. In the collection van Wickevoort Crommelin is an old male in full dress (249—3), shot 26 January 1855 on the Y, in which the undersurface is dull brown.

Hybrid between *Aythia ferina* (L.) \times *Aythia nyroca* (Güldenstädt).

Of this hybrid, the so-called *Fuligula homeyeri* Bädcker, a male is in the collection van Wickevoort Crommelin (249—5). The bird has been caught alive in our country, 25 February 1870, locality not mentioned, and has lived till 9 June 1870 in the Zoological Garden at Rotterdam.

55. *Aythia nyroca* (Güldenstädt). [WITOOGGEEND].

This species belongs to the rarer ducks of our country. Every year specimens are killed on the lakes in the neighbourhood of Leiden and it is not impossible that a single pair breeds there.

I received the following specimens:

Notes from the Leyden Museum, Vol. XXX.

- ♂, 22 September 1904, Nieuwkoop, Zuid-Holland.
 ♀, 6 September 1905, »
 ♂, 19 September 1905, »
 ♂, 7 October 1905, »
 ♀, 7 October 1905, »
 ♀, 7 October 1905, »
 ♂, 12 October 1906, »
 ♂, 20 October 1906, »
 ♀, 24 December 1906, »
 ♂, 26 September 1907, »

In August 1907 two more examples were killed on the same spot, these specimens however unfortunately have been lost for our collection.

56. *Fuligula fuligula* (L.). [KUIFEEND].

Very numerous in winter on the fresh-water lakes. According to Mr. A. A. van Pelt Lechner this bird is breeding in the province Noord-Brabant. We received 22 specimens killed in the months October, November, December, January, February, March and April. This year I received a male in change, shot 3 August 1908 near Nieuwkoop.

Hybrid between *Fuligula fuligula* (L.) × *Aythya nyroca* (Güldenstädt).

(Plate 7).

A hybrid between the two named species has been shot 8 September 1905 at Nieuwkoop. It is a female. The uppersurface has the appearance of a female *fuligula*, the vermiculation of the feathers is however nearly absent; a small crest is present; wing as in *fuligula*; chin white; throat and neck dark brown; feathers of the undersurface brown with small or broader white edges; forehead and forepart of cheeks whitish; iris yellow; bill grey-black, feet yellowish grey, webs black; wing 195, bill 38 mm., the latter having the shape of that of *fuligula*.

Notes from the Leyden Museum, Vol. XXX.

Hybrid between *Fuligula fuligula* (L.) × *Fuligula marila* (L.).

A female cross of these species has been killed on Texel, 19 February 1897, and was presented to our collection by the late Herman Albarda. The colour and markings of the uppersurface are between those of *fuligula* and *marila*; the crest is developed; the undersurface is more like that of *marila*, vermiculations on the feathers of the abdomen resemble at *marila*; the bill is much smaller than that of *marila*, but a little larger than that of *fuligula*; iris yellow; wing 200 mm.

57. *Fuligula marila* (L.). [TOPPEREEND].

We purchased a fine series of 24 specimens killed in the months September till March, on inland waters as well as at the seacoast.

According to the late H. Schlegel a specimen of the american *Fuligula affinis* Eyton should have been killed in our country (Schlegel, Cat. Anseres, *Fuligula affinis*, n^o. 7). This specimen, a female, shot 21 December 1859 at Katwijk, is still in our collection. I have compared this example with our specimens of *affinis* from North-America and with our series of *marila* and I am convinced that the specimen does not belong to *affinis*, but that it is a true *marila*. A female *marila*, shot 12 November 1904 on Texel, even is smaller than this specimen. The white surrounding of the bill in Schlegel's specimen is also too extensive for *affinis*.

In January 1897 the late Herman Albarda presented to our collection a female duck, shot 13 January 1897 on Texel, which he thought to be a cross of *Fuligula marila* (L.) and *Clangula clangula* (L.). With this determination I cannot agree, as the bird is in every respect a female of *marila*, except in its abnormal small white collar on the foreneck.

58. *Clangula clangula* (L.). [BRILEEND].

The Museum received 12 specimens in different plumage, most of them from the fresh-water lakes in the neighbourhood of Leiden.

59. *Harelda hyemalis* (L.). [IJSEEND].

As a rule this duck is a tolerably rare winter visitor; in some winters however it appears in no small number.

We received the following specimens:

young ♂, 13 November 1904, Nieuwkoop, Zuid-Holland.

♂, in full dress, 2 December 1905, Veeregat, Zeeland.

Presented by Mr. T. M. Pike.

♂, in change, 24 December 1906, Nieuwkoop.

♂, in full dress, 7 January 1908, Zuiderzee, near Anna Paulowna, Noord-Holland.

♂, in full dress, 8 January 1908, Texel.

♀, 11 January 1908, Texel.

♂, in full dress, 11 January 1908, Texel.

♂, in full dress, 16 January 1908, den Helder, Noord-Holland.

♂♂♂, in full dress, 18 January 1908, Texel.

♂♂, in full dress, 20 January 1908, Texel.

♂, in full dress, 25 January 1908, den Helder.

♂, in full dress, 25 January 1908, Texel.

60. *Oidemia nigra* (L.). [ZWARTE ZEE-EEND].

We received 19 specimens, males and females, in different plumage, killed from October till March, and one female, killed 11 June 1908 on the shore at Noordwijk.

61. *Oidemia fusca* (L.). [GROOTE ZEE-EEND].

We received 8 specimens, among which only one male in full dress, killed 1 March 1907 in the Veeregat, Zeeland, and presented by Mr. T. M. Pike; the other ones are females and males in the brown plumage, all killed in November 1904, 1905, 1906 and 1907.

The young in down in the collection van Wickevoort Crommelin (256—5), captured near Santpoort, Noord-Holland, 5 July 1860, does not belong to this species, is even not a young of a diving-duck, but that of the domestic race of *Anas boschas*.

62. *Somateria mollissima* (L.). [EIDEREEND].

As I have already communicated in the »Ornithologische Monatsberichte'' of 1906, the Eider Duck has bred in 1906 in Holland on the island of Vlieland. Through the kindness of the mayor of Vlieland, Mr. J. Molenaar, the Museum received three eggs of a clutch of four, found 7 June 1906 on the top of a dune on that island. Two further nests, containing each three eggs, were found a few days before and a few days later. The eggs measure $74,5 \times 54$, 78×55 and 76×55 mm.; they are of dull greenish colour. Mr. Molenaar informed me that already in the summer of 1905 Eiders have been seen on Vlieland, but then no eggs were found; in 1907 three pairs of these ducks were seen and one nest with five eggs was found, but unfortunately destroyed by boys. Mr. Molenaar supposes, that in 1906 as well as in 1907 incubations have succeeded. It is to hope, that his supposition is right and that the Eider Duck may become a regular breeding bird in Holland. In 1908 also eggs have been found on Vlieland as well as on Terschelling, where in 1906 and 1907 the bird also has been observed and also eggs have been found. In winter Eiders visit our country every year, but not always in the same number, being in some years tolerably common, in others again distinctly rare. As to the occurrence in the waters of the province Zeeland the late Mr. T. M. Pike wrote to me, that they appear annually in the Veeregat in small lots, usually to be seen feeding over the musselbeds and stone piers, which extend from Veere towards the Roompot. He has seen on several occasions from 20 to 30 Eiders together in the channels, which run through between the Neeltje Jans Roggenplaat in the Ooster Schelde.

We received the following specimens:
 young ♂, 11 November 1905, Texel.
 ♂ in change, 21 November 1905, Texel.
 ♂ in change, 25 December 1905, Texel.
 ♀, 16 January 1907, Texel.
 ♂ in change, 15 January 1908, Texel.
 ♀, 15 January 1908, Texel.
 ♂ in change, 27 January 1908, den Helder.

We have no males in breeding plumage from our country.

63. *Erismatura leucocephala* (Scopoli). [STEKELSTAARTEEND].

We possess a female, shot 27 November 1874 at Oost-zaan, Noord-Holland (Coll. van Wickevoort Crommelin, 259—2).

64. *Merganser merganser* (L.). [GROOTE ZAAGBEK].

Though a common winter visitor we received only three examples, two females killed February and November 1906 near Nieuwkoop and a male in immature dress, killed February 1906 at Nieuwwatering, Zuid-Holland.

65. *Merganser serrator* (L.). [MIDDELSTE ZAAGBEK].

This species is very common every winter, at the seashore as well as on the inland waters. We received 12 specimens, females, males in change and males in full dress, killed from November till March.

66. *Mergus albellus* L. [NONNETJE].

The smew visits every year the lakes in the vicinity of Leiden, one year in larger number than in the other. On the seashore it is rarer. The Museum received since 1904:

♀, 13 December 1904, Nieuwkoop.
 ♂ in full plumage, 20 January 1905, Kagermeer.
 ♂ » » » 10 February 1905, Nieuwkoop.
 ♂ » » » 25 February 1905, Leimuiden.
 ♀, 6 December 1905, Nieuwkoop.

- ♂ in immature dress, 8 January 1906, Leimuiden.
 ♀, 8 January 1906, Leimuiden.
 ♀, 15 January 1906, Ooy, Gelderland.
 ♂ in full plumage, 14 December 1906, Nieuwkoop.
 ♀, 23 January 1908, Texel.
 ♂ in immature dress, 28 January 1908, Workum, Friesland.
 ♂♂ in full dress, 3 February 1908, Leimuiden.
 ♂ in immature dress, 8 February 1908, Nieuwkoop.

Concerning the annual appearance in autumn and winter of ducks and geese in the Zeeland waters, the late Mr. T. M. Pike, who has been shooting with the puntgun during more than twenty years on our coast, has given me interesting notes. He wrote to me: »The wigeon ¹⁾ is the most numerous here; it arrives in small numbers in September, becomes more numerous in October and November. Probably a good number pass through further south, but here retain some 4 or 5 thousand right through the winter. Next comes *Anas boschas*, not so numerous as *penelope*, but still to be reckoned by thousands, they become scarcer as the winter draws in, mostly I believe, owing to the decoy here at Vrouwepolder, which is the best in Holland and catches chiefly duck ²⁾ and teal ³⁾, not many wigeon. Teal are numerous in October and November and then disappear, being got by the decoy and some going on south. Pintails ⁴⁾ remain in small number throughout winter, but are most numerous on migration in autumn and again in spring. Shovelers ⁵⁾ are here in some numbers from October to March. I once killed a garganey ⁶⁾. The gadwall ⁷⁾ does not occur here, but is found on the East Schelde on the Roggenplaat and is caught in some numbers in the Schouwen decoys. It is more a pond bird, that is does not come to the tide, unless

1) *Mareca penelope*.

2) *Anas boschas*.

3) *Nettion crecca*.

4) *Dafila acuta*.

5) *Spatula clypeata*.

6) *Querquedula querquedula*.

7) *Chaulelasmus strepera*.

frozen out. The same applies to the tufted duck ¹⁾; I once killed 28 of them at one shot, but in mild winters I do not see them. A few scaups ²⁾ may be seen here any time, but in severe frost as in 1891 and 1895 they appear in large numbers from their proper habitat, which is more outside water, such as Brugsluis and the next gat, outside of Schouwen.

Black scoters ³⁾ come annually in some numbers and a few velvet scoters ⁴⁾ also come in the Veeregat in hard frost. Long-tailed ducks ⁵⁾ appear almost if not quite annually, but the only adult male I ever saw was the one I sent to you. Golden eyes ⁶⁾ are common enough, but difficult to shoot. *Nyroca* I have never met, *ferina* is not common, usually with scaups.

The sheldrake ⁷⁾ is another common bird here. With regard to the association together of Anatidae, I have killed at one shot pintail, teal, shoveler, wigeon and duck. I often see mixed lots appearing together when resting on the sounds.

The goosander ⁸⁾ I have never seen here, but the redbreasted merganser ⁹⁾ is a common winter bird here from October to March. The smew ¹⁰⁾ is a freshwater bird, only coming to the tide in frost. They are rare in salt water tided areas.

As to the geese, the earliest to arrive is the beangoose ¹¹⁾, which comes in September and stays at all events to March. The most numerous goose is the pink-footed goose ¹²⁾, which does not arrive here in full numbers till early December and in mild winters the bulk of them leave early in February. The white-fronted goose ¹³⁾ resembles the pink-footed in its seasons. The grey lag ¹⁴⁾ is an autumn and spring migrant and rare during the dead of the winter. The most frequented haunt of this goose are the big grass marshes outside Stellingdam and Middelharnis. White-fronted geese will associate

1) *Fuligula fuligula*.

2) *Fuligula marila*.

3) *Oidemia nigra*.

4) *Oidemia fusca*.

5) *Harelda hyemalis*.

6) *Clangula clangula*.

7) *Tadorna tadorna*.

8) *Merganser merganser*.

9) *Merganser serrator*.

10) *Mergus albellus*.

11) *Anser fabalis*.

12) *Anser brachyrhynchus*.

13) *Anser albifrons*.

14) *Anser anser*.

either with beangeese or pink-footed geese; I have killed them at the same shot. But pink-footed geese and beangeese are not found together, according to my somewhat extensive experience, I have killed a thousand grey geese in my time. The pink-footed geese feed by day in the surrounding islands of Zeeland and assemble by night on the Scholleman shoal, on the outside of the Veeregat. The beangeese prefer the island marshes farther up the estuary. In moonlight nights they will sometimes remain all night in land. The lesser white-fronted goose ¹⁾ I have never recognised. The brent goose ²⁾ does not occur here, except in severe frost; it is common in the Brouwershavengat. The bernacle goose ³⁾ is common on the Krammensche Slikken, but only comes here in frost. On 21 January 1903 I killed 30 bernacles here at one shot. But in mild winters I don't see them. The red-breasted goose ⁴⁾ has got once on the Dortsman sand near Stavenisse in company with bernacles by a friend of mine; this would be twenty years ago."

VULTURIDAE.

67. *Gyps fulvus* (Gmelin). [VALE GIER].

We possess no specimen killed in our country. This species has twice occurred in the Netherlands, once in the province of Gelderland and once, in June 1904, in Noord-Brabant (Snouckaert, Tijdschr. Ned. Dierk. Ver. X, 1908, p. 211).

FALCONIDAE.

68. *Circus aeruginosus* (L.). [BRUINE KUIKENDIEF].

20 specimens. Of this species, in the watery places of our country a common bird of prey, we possess a fine series of stuffed specimens, among which are interesting two young birds, which have chin, throat, bastard-wing,

1) *Anser erythropus*.

2) *Branta bernicla*.

3) *Branta leucopsis*.

4) *Branta ruficollis*.

outer underwingcoverts, vent and inner part of tibiae pure white (Coll. van Wickevoort Crommelin, 20—4, and Schlegel, Cat. Accipitres, *Circus aeruginosus*, n^o. 36) and another young bird with the last-named specimen from the same nest (Schlegel, *ibid.* n^o. 35), having chin, upperpart of throat, outer underwingcoverts, vent and tibiae white. The other parts of these three birds are dark chocolate-brown with lighter brown margins to some feathers of the uppersurface.

69. *Circus cyaneus* (L.). [BLAUWE KUIKENDIEF].

We received only one specimen, a young male, killed 26 October 1907 at Domburg, Zeeland. Altogether we possess a series of 32 stuffed specimens from the Netherlands.

70. *Circus pygargus* (L.). [ASCHGRAUWE KUIKENDIEF].

We received a female, shot on its nest, with two eggs from Ameland, 12 June 1905, where this species is rather common. Further a male shot in July 1906 near Asten, Noord-Brabant, and a male shot 30 August 1908 at Deurne, Noord-Brabant. The series of 35 specimens in the collection van Wickevoort Crommelin is splendid.

71. *Circus macrourus* (Gmelin). [STEPPENKUIKENDIEF].

We have only one specimen shot in our country, viz.: the female, killed on the dunes of Noordwijk, 23 April 1866, and preserved in the collection van Wickevoort Crommelin (22—1). This species is very rare in the Netherlands, only two further specimens are known from our country.

72. *Astur palumbarius* (L.). [HAVIK].

In the latter years we did not receive this species. There are in our collection 15 examples from the Netherlands.

73. *Accipiter nisus* (L.). [SPERWER].

24 specimens, mostly killed in the last four months of the year, only one in January, three in February and two in March.

74. *Buteo buteo* (L.). [BUIZERD].

8 specimens killed in winter in the provinces Gelderland and Drenthe.

75. *Buteo buteo desertorum* (Daudin). [STEPPEBUIZERD].

There are in the collection of Mr. Bn. Snouckaert van Schauburg two specimens of this little buzzard, caught near Delden, province Overijssel, 16 April 1902 and 30 April 1904. Mr. Snouckaert has recorded these birds in his ornithological annual reports (Tijdschr. Ned. Dierk. Ver. VII, 1902, p. 267; VIII, 1904, p. 250) under the name of *Buteo zimmemannae* Ehmcke. He was so kind to send me on my request for examination one of these birds, which appeared to me to be *desertorum*, agreeing with examples from southern Russia in our collection. I use the name *desertorum* for these South-Russian examples, though I am not quite sure, that this is the correct name for the desert buzzard of south-eastern Europe.

76. *Buteo ferox* (Gmelin). [ARENDBUIZERD].

The only specimen observed in our country, is now living in the Zoological Garden at Amsterdam. The bird was captured in the beginning of December 1905 near Amsterdam.

77. *Aquila chrysaetos* (L.). [STEENAREND].

This species has been shot in the provinces Zuid-Holland, Noord-Brabant, Overijssel and Friesland. We possess no example killed in our country.

78. *Aquila heliaca* Savigny. [KEIZERSAREND].

Of this species we have also no specimen shot in our country. In 1836 a specimen is said to have been killed in Noord-Brabant near Bergen-op-Zoom (P. Six in Herklots, Bouwst. Faun. Ned. I, 1853, p. 207).

79. *Aquila clanga* Pallas. [BASTAARDAREND].

We possess a young specimen, killed in October 1891 at Schoonheten near Raalte, province Overijssel, and presented in March 1892 to our Museum by X. F. C. Bn. Bentinck.

80. *Aquila pomarina* Brehm. [SCHREEUWAREND].

We possess the skeleton of a female, captured May 1855 at Het Loo, Gelderland (van Oort, Cat. Ost. Ois. 1907, p. 53, *Aquila pomarina* — a). This bird lived till 1856 in the Zoological Garden at Amsterdam and was then presented to our Museum. Schlegel has given in his »Vogels van Nederland» under the name of *Aquila clanga*, its description and measurements (wing 17 pouces = 460 mm.) and the latter show, that the bird belongs to *pomarina*.

81. *Haliaetus albicilla* (L.). [ZEEAREND].

A young female was shot 21 November 1907 in the Anna Paulowna polder and purchased for our collection. The Museum possesses further ten specimens killed in Holland; among them are three adult ones with white tails, two males in our old collection, one, only labelled Holland, purchased in 1858 from Mr. van Lidth de Jeude, the other killed near Lisse in 1837 and presented by C. J. Temminck (N^{os}. 1 and 2 of Schlegel's Catalogue) and finally a female shot 6 January 1860 near Noordwijk, making part of the collection van Wickevoort Crommelin (4—4).

82. *Circaetus gallicus* (Gmelin). [SLANGENBUIZERD].

We possess no specimen shot in our country. This species is a very rare straggler to the Netherlands. It has been observed twice in Zuid-Holland and once in Noord-Brabant.

83. *Archibuteo lagopus* (Brünnich). [RUIGPOOTBUIZERD].

We received only one specimen, a female, shot 25 February 1908 at Egmond-Binnen, Noord-Holland. This species is a regular winter visitor to our country. In the collection

van Wickevoort Crommelin is a fine series of 16 specimens and in the general collection a series of 12.

84. *Milvus milvus* (L.). [WOUW].

This species we did not receive in the latter years. We possess altogether 16 specimens killed in the Netherlands: 10 specimens in the collection van Wickevoort Crommelin (10—1 to 9 and 11), 5 specimens mentioned in the Catalogue by Schlegel (*Milvus regalis*, nos. 1, 3, 4, 9 and 10) and further a male shot 14 March 1879 near Lisse, presented by Mr. M. Temminck.

85. *Milvus korschun* (S. G. Gmelin). [ZWARTBRUINE WOUW].

We possess three specimens killed in the Netherlands: two specimens in the collection van Wickevoort Crommelin (11—3 and 5: ♀, 21 April 1874, Vogelenzang, and ♂, 27 May 1886, Santpoort) and one in the general collection (♂, 4 June 1860, Voorhout; Schlegel, Cat. Milvi, *Milvus aetolius*, n^o. 3).

86. *Pernis apivorus* (L.). [WESPENDIEF].

Altogether we possess 12 specimens shot in our country in the months May, June, July, August, September and October on the dunes of Noord- and Zuid-Holland and in Noord-Brabant. In the latter years we have not received this species.

87. *Hierofalco gyrfalco* (L.). [GIERVALK].

We possess two specimens killed in the Netherlands, viz.: a young male, shot 16 October 1849 near Noordwijk, Zuid-Holland, by Mr. F. A. Verster (Schlegel, Cat. Falcones, *Falco gyrfalco*, n^o. 5), and a young male, shot 3 December 1864 at Zandvoort, Noord-Holland (Coll. van Wickevoort Crommelin, 12—1).

88. *Falco peregrinus* Tunstall. [SLECHTVALK].

We received only two young specimens, a very small female (if well sexed?), killed 9 October 1907 at Westernieland, Groningen (wing 310 mm.), and a female killed 17 October 1907 near Workum, Friesland. In the collection van Wickevoort Crommelin and in our general collection together we possess 41 stuffed specimens killed in the Netherlands. We have very small specimens, which are determined as females, but as the determination of the sex in young birds generally and in young birds of prey specially is very difficult and often requires microscopical examination, it is possible that the sexes mentioned on the labels are not always correct.

89. *Falco barbarus* L. [BARBARIJSCHER VALK].

We possess a female, caught August 1857 at Valkenswaard, Noord-Brabant. This bird lived till 2 August 1862 in the Zoological Garden at Amsterdam and was then presented to our Museum. Schlegel supposed the bird to be *Falco barbarus* L. (Cat. Falcones, *Falco barbarus*, n^o. 6); he mentioned it as a male, on the postament the sex is however given as female. After a careful examination I am also convinced, that this specimen belongs to *barbarus*. As the bird has lived during five years in confinement, the plumage is certainly not quite normal and not in keeping with its age. The uppersurface is pale brownish grey, the feathers with faint blackish bars and with pale rufous edgings; crown and forehead dark brown with black shaft-stripes and rufous edgings; hindneck rufous with some dark brown spots; earcoverts greyish brown; cheek-stripes blackish, margined with rufous at the hinder part; sides of neck, chin and throat creamy white; groundcolour of undersurface white with buff tinge, on the lower breast and the sides of the breast with rusty tinge; markings on the undersurface like in an old *peregrinus*, upperbreast with a few black shaft-lines; wing 310, tail 175, tarso-

metatarsus 51, culmen 26 mm. For comparison I had six specimens of *barbarus* in our collection (Schlegel, Cat. Falcones, *Falco barbarus*, n^{os}. 1 to 5, and a young specimen from the Red Sea); apart from the markings on the under-surface our specimen agrees tolerably well with n^o. 4 of the Catalogue, an old specimen, not sexed, from Sennaar. Our specimen is the only one known to me from the Netherlands, the specimen under the name of *barbarus* in the collection of the Zoological Garden at Amsterdam, caught 2 October 1886 at Cromvoirt, Noord-Brabant, being in my opinion a young *peregrinus*, a female of small size (wing 315, tail 170, tarso-metatarsus 50 mm.) with not very broadly striped underparts.

90. *Falco subbuteo* L. [BOOMVALK].

Three young specimens, killed in September at Zoeterwoude, Wageningen and Groesbeek.

91. *Falco merillus* (Gerini). [SMELLEKEN].

We received 15, all young specimens, viz.: 2 males and 10 females from Harderwijk, Gelderland, October 1907, one male 25 October 1907 from Egmond-Binnen, Noord-Holland, and two females 11 January and 25 January 1908 from Texel.

92. *Cerchneis tinnunculus* (L.). [TORENVALK].

8 specimens.

93. *Erythropus vespertinus* (L.). [ROODPOOTVALK].

We possess no specimen from our country. This species only once has been killed in the province Limburg in May 1901 (Snouckaert, Tijdschr. Ned. Dierk. Ver. VII, 1902, p. 266).

PANDIONIDAE.

94. *Pandion haliaetus* (L.). [VISCHAREND].

An adult female was caught near the polder „het Noorden” on the island of Texel on May 9th 1907 and purchased

for our Museum. Altogether we possess 10 specimens killed in our country and also a skeleton of a specimen shot in Holland.

GALLIDAE.

95. *Perdix perdix* (L.). [PATRIJS].

We purchased 17 specimens from different localities. We possess 8 colour-variations of this species, all killed in Holland: two almost white ones, a grey one in which the brown colour is replaced by pale brown and yellowish white, a dark maroon one with pale brown head, a pale brown one, a pale brown one variegated with white and two specimens strongly variegated with white. A male, shot 18 September 1861 in the province of Groningen, is very dark at upper- and undersurface; chin and throat are however paler as usually.

96. *Caccabis rufus* (L.). [ROODE PATRIJS].

This species has been observed in Limburg and Gelderland. As it has been introduced in some parts of Germany, it is not certain, that the birds observed in our country really were wild birds. We don't possess examples shot in the Netherlands.

97. *Coturnix coturnix* (L.). [KWARTEL].

We received only one specimen, a female, killed 26 October 1907 on Texel.

98. *Lyrurus tetrix* (L.). [KORHOEN].

We purchased five specimens killed in the province Drenthe. In January 1886 the late Mr. H. Albarda presented to our collection a female of the grey variety, in which the rufous colour is wanting; this bird has been shot 31 December 1885 at Noordwolde, province Friesland.

99. *Tetrastes bonasia* (L.). [HAZELHOEN].

No specimen killed in our country is in the collection. The only known specimen, with certainty killed in the Netherlands, has not been preserved; it was shot 9 November 1895 near Winterswijk, province Gelderland ¹⁾).

RALLIDAE.

100. *Rallus aquaticus* L. [WATERRAL].

14 specimens killed in the months October, November, December, January and February.

101. *Crex crex* (L.). [KWARTELKONING].

No adult specimen of this tolerably common species is received by the Museum since 1904, only two young ones in down captured on Texel 28 June 1906.

102. *Porzana porzana* (L.). [PORSELEINHOENTJE].

Six specimens, killed in August, September and October near Leiden and Wageningen and on Texel.

103. *Porzana parvus* (Scopoli). [KLEIN WATERHOENTJE].

We possess only one specimen killed in the Netherlands, a young male from Zwartsluis, Overijssel, 9 September 1872 (Coll. van Wickevoort Crommelin, 222—1).

104. *Porzana pusillus* (Pallas). [KLEINSTE WATERHOENTJE].

We possess four specimens from the Netherlands, viz.: old female, 10 August 1868, Helvoort, Noord-Brabant; young male, 31 August 1872, Zwartsluis, Overijssel (Coll. van Wickevoort Crommelin, 223—1);

1) C. Nozeman (Nederlandsche Vogelen, II, 1789, p. 165) communicates, that one Count van Nassau-Bergen told him in 1748, that he had shot once in the woods near Bergen, Noord-Holland, an example of *Tetrao urogallus* L.

young female, 8 August 1874, Ilpendam, Noord-Holland
(Coll. van Wickevoort Crommelin, 223—2);

young female, 19 September 1874, Oostzaan, Noord-Holland
(Coll. van Wickevoort Crommelin, 223—3).

Schlegel has mentioned in his Catalogue of the Ralli, a specimen from Holland (*Porzana pygmaea*, n^o. 2); the locality of this specimen however is doubtful to me, as on the postament is written Europe, Germany and Holland.

105. *Gallinula chloropus* (L.). [WATERHOENTJE].

23 examples in different ages.

106. *Fulica atra* L. [MEERKOET].

8 specimens. In the collection van Wickevoort Crommelin is a young female, shot 17 August 1871 in the province Noord-Holland (227—6), in which the coloration is pale greyish brown ¹⁾.

GRUIDAE.

107. *Grus grus* (L.). [KRAANVOGEL].

An old female was shot 25 October 1907 at Deurne, Noord-Brabant, and purchased for our collection. We have further only one indigenous specimen, an adult one, not sexed, labelled Holland (Schlegel, Cat. Ralli, *Grus cinerea*, n^o. 2).

OTIDIDAE.

108. *Otis tarda* L. [GROOTE TRAP].

The Museum purchased in January 1906 a male, that has been shot 30 December 1905 near Maasdam, Hoekschewaard. We have 4 other specimens killed in our country, viz.:

♂, 7 March 1855, Prinsenvolder, near Dordrecht (Coll. van Wickevoort Crommelin, 165—1).

1) In the collection van Wickevoort Crommelin is an old male of *Porphyrio porphyrio* (L.), shot 22 July 1874 at Amstelveen, Noord-Holland. Without doubt this specimen has escaped from captivity.

♀, 17 February 1875, Zevenaar, province of Gelderland.
Presented by Jhr. van Nispen tot Zevenaar.

♀, 7 December 1880, Anna Paulowna polder. Presented
by Mr. C. E. Perk.

♂, 12 January 1888, Venneperdiep, Haarlemmermeer.

109. *Tetrax tetrax* (L.). [KLEINE TRAP].

Of this species we possess four examples killed in Holland:

♀, 28 December 1853, near Elburg, province of Gelderland (Coll. van Wickevoort Crommelin, 166—1).

♂, 16 September 1865, near Lisse, province of Zuid-Holland.

♀, 28 January 1879, near Alkmaar, province of Noord-Holland (Coll. van Wickevoort Crommelin, 166—3).

♀, 29 November 1896, Schagen, Noord-Holland. Presented
by Jhr. Mr. D. van Foreest.

110. *Houbara macqueenii* (Gray & Hardwicke). [AZIATISCHE
KRAAGTRAP].

The Museum possesses a fine male, that has been shot 10 December 1850 near Zeist, province of Utrecht, and was presented to our collection by Jhr. L. Huydecoper van Wulperhorst in 1862. It is till yet the only example, that has been killed in our country.

CHARADRIIDAE.

111. *Charadrius aprivarius* L. [GOUDPLEVIER].

We purchased 12 specimens, young ones and adults in winter plumage. Specimens in summer plumage we dit not receive.

A pale variation was presented by Mr. H. Albarda to our collection in 1885; this specimen, a female, has been captured near Birdaard, Friesland, 5 March 1885.

112. *Charadrius dominicus fulvus* Gmelin. [AZIATISCHE
GOUDPLEVIER].

There is in our collection a female, captured 17 February 1896 near Birdaard, province of Friesland, and presented to our Museum by the late Mr. H. Albarda.

113. *Eudromias morinellus* (L.). [MORINELPLEVIER].

I received only one specimen, a male in imperfect summer dress, killed 31 August 1907 at Oegstgeest near Leiden. There are in the collection specimens killed in May, June, August, September, October and November.

114. *Aegialites dubius* (Scopoli). [KLEINE PLEVIER].

Besides the three specimens mentioned by Schlegel (Cat. Cursores, *Charadrius philippinus*, n^{os}. 2, 3 and 4) as having been killed in Holland, notwithstanding the old labelling by Temminck is „Europe”, we possess an old male and two young in down, killed together at Wassenaar, province Zuid-Holland, 27 June 1867.

115. *Aegialites alexandrinus* (L.). [STRANDPLEVIER].

The Museum received 13 specimens, adults in summer and winter plumage, young ones and a young in down, killed on Texel and on the Hoek van Holland.

116. *Aegialites hiaticula* (L.). [BONTBEKPLEVIER].

24 specimens in summer and winter plumage.

117. *Vanellus vanellus* (L.). [KIEVIT].

We received 12 specimens. In the collection van Wickevoort Crommelin is a white young in down (177—9).

118. *Squatarola squatarola* (L.). [GOUDKIEVIT].

Besides eight examples in winter dress, killed in the months of September, October, November and December, we received the following specimens with more or less black undersurface:

♂, 31 October 1905, Texel; undersurface strongly mottled with black.

♀, 20 May 1907, Westernieland, province of Groningen; throat and breast nearly black.

♂, 28 May 1907, Westernieland, Groningen; full summer dress, only a few white feathers on the breast and throat.

♀, 28 May 1907, Westernieland, Groningen; throat and breast mottled with black.

♂, 19 August 1907, Westernieland, Groningen; summer dress with a few white feathers on throat and breast.

♂, 5 May 1908, Westernieland, Groningen; full summer dress.

♂, 31 May 1908, Westernieland, Groningen; full summer dress.

A male, shot 26 December 1905 on Texel, has several black feathers in the white throat, and a male from the same locality, killed 28 November 1905, has among the feathers of the throat and of the breast some black feathers.

119. *Arenaria interpres* (L.). [STEENLOOPER].

This species is tolerably common in autumn and winter on our shore. Besides 13 specimens in winter plumage, killed in August, September, December and March, I received only one example, a male, in summer plumage, captured 4 May 1908 on the island of Terschelling. Among the seven specimens in the collection of the late van Wickevoort Crommelin there are two specimens in summer plumage, a male killed 19 August 1874 in the province Noord-Holland (178—6) and a female killed 8 May 1871 near Sneek, province of Friesland (178—4). In our old collection there are also two specimens in summer plumage killed in Holland, a male shot by Schlegel near Katwijk, 16 May 1848 (Schlegel, Cat. Cursores, *Strepsilas interpres*, n^o. 1) and a female labelled only Holland (Schlegel, *ibid.* n^o. 2).

120. *Haematopus ostralegus* L. [SCHOLEKSTER].

23 specimens.

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121. *Recurvirostra avosetta* L. (KLUIT).

Eight examples, adult and young ones.

122. *Himantopus himantopus* (L.). [STELTKLUIT].

This species is not represented in our collection by examples shot in the Netherlands. The bird has been observed very rarely in the province of Noord-Brabant.

123. *Phalaropus lobata* (L.). [ASCHGRAUWE FRANJEPOOT].

The Museum purchased four females killed 12 September 1905 on Texel, and two females killed there 28 September 1906; all the specimens in winter plumage. There are no specimens in summer dress in our collection, only four specimens in winter plumage in the collection van Wickevoort Crommelin (192—4 to 7).

124. *Crymophilus fulicaria* (L.). [ROSSE FRANJEPOOT].

November 26th 1904 I shot on the seashore near Noordwijk two males in winter plumage. Iris dark; bill dark brown, base yellowish; legs grey, webs yellow. Our Museum does not possess specimens in summer plumage killed in Holland, only five specimens in winter dress:

- , November 1834, Katwijk (Schlegel, Cat. Scolopaces, *Phalaropus fulicarius*, n^o. 5);
- ♂, October 1836, Katwijk (Schlegel, ibid. n^o. 4);
- ♀, 30 November 1848, Noordwijk (Schlegel, ibid. n^o. 6);
- ♀, 1 November 1869, de Zaan (Coll. van Wickevoort Crommelin, 191—4);
- ♀, 5 December 1872, Oostzaan (Coll. van Wickevoort Crommelin, 191—5).

125. *Tringa canutus* L. [KANOETSTRANDLOOPER].

This is a common winter visitor to our shore. We received three specimens in more or less perfect summer dress, viz.:

♂, 12 August 1907, Pieterburen, province of Groningen.

♀, 14 August 1907, Pieterburen.

♀, 4 May 1908, Terschelling.

Further 10 specimens in grey plumage.

126. *Ancylocheilus subarquata* (Güldenstädt). [KROMBEK-STRANDLOOPER].

Besides eleven specimens in winter dress we received a female, killed 12 September 1905 on Texel, changing its summer dress into the winter dress. In the collection van Wickevoort Crommelin is a female in nearly full summer plumage, killed at Wijkermeer, 16 August 1856. We possess further a male in full plumage labelled only Holland (Schlegel, Cat. Scolopaces, *Tringa subarquata*, n^o. 1).

127. *Arquatella maritima* (Brünnich). [PAARSE STRANDLOOPER].

Since 1904 I received only one specimen, a female, killed 22 September 1906 on the island of Texel.

128. *Pelidna alpina* (L.). [BONTE STRANDLOOPER].

16 specimens. December 8th 1885 a whitish female has been caught at Hallum, Friesland; it has been presented to the collection by the late H. Albarda.

129. *Pelidna alpina schinzii* (Brehm). [KLEINE BONTE STRANDLOOPER].

19 specimens. This small race of the dunlin is breeding in our country. In 1904 I presented to the Leyden Museum a collection of birds-eggs, in which is preserved an egg of this subspecies, that I received in 1895 and that had been found some years before on the island of Texel.

130. *Leimonites minuta* (Leisler). [KLEINE STRANDLOOPER].

The Museum received 9 specimens killed in September on Texel and at Blokzijl, Overijssel, all females.

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131. *Leimonites temminckii* (Leisler). [KLEINSTE STRAND-
LOOPER].

We received one female, shot 31 July 1907 on Texel.

132. *Limicola platyrhyncha* (Temminck). [BREEDBEK-
STRANDLOOPER].

We possess a male, shot 15 August 1862 on the
Hoek van Holland by Mr. F. A. Verster (Schlegel, Cat.
Scolopaces, *Tringa platyrhyncha*, n^o. 2).

133. *Pavoncella pugnax* (L.). [KEMPHAAN].

24 specimens in different plumage.

134. *Calidris arenaria* (L.). [DRIETEENIGE STRANDLOOPER].

In our old collection we have two specimens in full
summer dress killed in Holland, however without exact loca-
lity or date (Schlegel, Cat. Scolopaces, *Tringa arenaria*,
n^{os}. 1 and 2) and one specimen in nearly full dress, also
without date or exact locality (Schlegel, *ibid.* n^o. 5). In the
van Wickevoort Crommelin collection there are no specimens
in summer plumage. Among the 12 examples we received
in the latter years, there is none in this dress.

135. *Tringoides hypoleucos* (L.). [OEVERLOOPER].

5 specimens.

136. *Totanus totanus* (L.). [TURELUUR].

19 specimens.

137. *Totanus maculata* (Tunstall). [ZWARTE RUITER].

Scolopax fusca Linné, Syst. Nat. Ed. XII, I, 1766, p. 243;
nec *Scolopax fusca*, Syst. Nat. Ed. X, I, 1758, p. 145.

The Museum purchased only one specimen, a female in
winter plumage, from Texel, 25 September 1907.

138. *Totanus oerophilus* (L.). [WITGATJE].

We received only two specimens, a male, shot 27 August

1906 at Leimuiden, Zuid-Holland, and a male shot 20 December 1906 at Westernieland, Groningen.

139. *Totanus glareola* (L.). [BOSCHRUITER].

This species we did not receive in the latter years.

140. *Glottis littoreus* (L.). [GRÖENPOOTRUITER].

Only two specimens are received, a male shot 10 September 1907 on the coast of Groningen and a male from the same locality, killed 26 August 1908.

141. *Limosa limosa* (L.). [GRUTTO].

15 specimens.

142. *Limosa lapponica* (L.). [ROSSE GRUTTO].

Eleven specimens, among which four in summer dress, killed in August on Texel and on the coast of Groningen.

143. *Numenius arquata* (L.). [WULP].

Ten specimens.

144. *Numenius phaeopus* (L.). [REGENWULP].

Ten specimens. This species is throughout the year in our country, without breeding here however.

145. *Numenius tenuirostris* Vieillot. [DUNBEKWULP].

The Museum possesses two specimens killed in the Netherlands:

♂, 5 December 1856, Velserdijk near Spaarndam, Noord-Holland (Coll. van Wickevoort Crommelin, 181—1).

♀, 28 February 1893, Oude Bildtzijsl, Friesland. Presented by Mr. H. Albarda.

146. *Scolopax rusticola* L. [HOUTSNIP].

Eight specimens. We possess a pale variation (Schlegel, Cat. Scolopaces, *Scolopax rusticola*, n^o. 5) and a male with

some white feathers in the wing (Coll. van Wickevoort Crommelin, 203—5).

147. *Gallinago gallinago* (L.). [WATERSNIP].

Twelve specimens. In the collection van Wickevoort Crommelin are three pale-coloured variations (205—3, 5 and 6), and in 1858 a whitish specimen has been purchased from the Cabinet van Lidth de Jeude (Schlegel, Cat. Scolopaces, *Gallinago scolopacina*, n°. 20).

148. *Gallinago major* (Gmelin). [POELSNIP].

The Museum received 5 specimens, four of them killed in September and one, a male, shot 23 December 1905 near Putten, Gelderland. It is not always easy to distinguish *G. gallinago* from *G. major*, but looking at the first primary, there can be no doubt, the outer web of this primary being in *gallinago* whitish and in *major* dark brownish.

149. *Gallinago gallinula* (L.). [BOKJE].

9 specimens killed in September, October and November.

GLAREOLIDAE.

150. *Glareola pratincola* (L.). [ZWALUWPLEVIER].

Has thrice occurred in the province of Noord-Brabant. We possess no indigenous specimen.

OEDICNEMIDAE.

151. *Oedicnemus oedicnemus* (L.). [GRIEL].

The Museum received only one specimen, a female, shot 14 May 1906 on the dunes of Wassenaar, Zuid-Holland, where the bird is still breeding in a few numbers.

CURSORIIDAE.

152. *Cursorius gallicus* (Gmelin). [RENOGEL].

No indigenous specimen is in the collection. The bird has occurred three times in our country.

LARIDAE.

153. *Megalestris skua* (Brünnich). [GROOTE JAGER].

Of this species, which is very rare in our country, we possess no indigenous skin or stuffed specimen. We have only the skeleton of a female, labelled Holland, 25 October 1856 (van Oort, Cat. Ost. Ois. 1907, p. 200, *Megalestris skua*—a).

154. *Stercorarius pomarinus* (Temminck). [MIDDELSTE JAGER].

Since 1904 we received only one specimen, a young male, killed in February 1907 near Hedel in the province of Gelderland, a locality tolerably far inland.

155. *Stercorarius parasiticus* (L.). [KLEINE JAGER].

Stercorarius parasiticus, Lönnberg, Zoologist, 1903, p. 338.

Stercorarius crepidatus, Saunders, C. B. Br. M. XXV, 1896, p. 327.

The Museum purchased eight specimens, all killed on the island of Texel:

♀, 30 August 1907, dark brown with pale cinnamon-brown edges to the feathers; head and nape pale cinnamon, undersurface greyish brown. Wing 300 mm., bill 30 mm.

♀, 1 September 1907, similar to the preceding but undersurface less greyish. Legs grey, webs black, in the upper part fleshy white. Wing 300 mm., bill 29 mm.

♂, 1 September 1907, nearly uniform dark brown, the uppersurface with some pale cinnamon edges to the

- feathers; undersurface dark greyish brown. Legs like in the foregoing specimen. Wing 285 mm., bill 30 mm.
- ♀, 11 September 1907, like the preceding specimen, but groundcolour somewhat lighter. Legs black. Wing 315 mm., bill 32 mm.
- ♂, 12 September 1907, uppersurface brown, edges to the feathers pale cinnamon, undersurface greyish white, barred with brown, undertailcoverts pale cinnamon, barred with brown. Bill dark grey, base lighter; legs pale bluish grey, extremity of webs black. Wing 312 mm., bill 30 mm.
- ♀, 25 September 1907, similar to the preceding specimen. Wing 295 mm., bill 31 mm.
- ♂, 25 September 1907, dark brown; head, nape, sides of neck cinnamon, wingcoverts edged with cinnamon; undersurface mottled with pale cinnamon. Legs bluish grey, extremity of feet and webs black. Wing 290 mm., bill 30 mm.
- ♂, 16 October 1907, nearly uniform dark brown, only a few feathers with pale cinnamon edges. Bill dark bluish grey, tip black, legs light bluish grey, extremity of webs black. Wing 300 mm., bill 30 mm.

In all these birds the shaft of the third primary is more or less whitish, not strongly contrasting with the shafts of the first two primaries.

156. *Stercorarius longicaudus* Vieillot. [KLEINSTE JAGER].

Stercorarius parasiticus, Saunders, C. B. Br. M. XXV, 1896, p. 334.

Of this species we received three specimens in the first plumage, killed also on the island of Texel:

- ♂, 12 September 1906, uppersurface dark brown with greyish white edges to the feathers, some of the wingcoverts having a pale cinnamon tinge in their edges; breast nearly white, sides of body, vent and undertailcoverts white, barred with dark brown. Bill dark grey, legs grey, extremity of feet and webs black. Wing 285 mm., bill 26 mm.

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♀, 30 August 1907, uppersurface dark brown with pale cinnamon edges to the feathers; undersurface whitish, thickly barred with dark brown. Legs grey, webs black, in their upper parts fleshy white. Wing 298 mm., bill 27 mm.

♂, 25 September 1907, uppersurface dark brown, feathers edged with whitish and pale cinnamon, undersurface whitish, thickly barred with dark brown, undertailcoverts with a faint tinge of pale cinnamon. Legs bluish grey, extremity of feet and webs black. Wing 285 mm., bill 26 mm.

The shaft of the third primary in these birds is dark.

157. *Larus glaucus* Brünnich. [BURGEMEESTER].

This species we did not receive in the latter years. We possess altogether two adult specimens and nine young ones, killed in the months November, December, January and March on the coast of Noord- and Zuid-Holland.

158. *Larus leucopterus* Faber. [KLEINE BURGEMEESTER].

We possess the only specimen that has been killed in our country. It is a young bird, shot long time ago, 10 October on our coast (Schlegel, Cat. Lari, *Larus leucopterus*, n^o. 5).

159. *Larus marinus* L. [MANTELMEEUW].

We received eleven specimens in perfect and imperfect dress. This species is to be found throughout the year on our coast, but does not breed here.

160. *Larus fuscus* L. [KLEINE MANTELMEEUW].

We did not receive this species in the latter years. We possess three adult specimens and seven young ones, killed in every season.

161. *Larus argentatus* Brünnich. [ZILVERMEEUW].

We received 19 specimens in different plumage.

162. *Larus canus* L. [KLEINE ZEEMEEUW].

The Museum received 9 specimens, adults in winter plumage and young ones.

163. *Larus ridibundus* L. [KOKMEEUW].

We received 15 specimens in different plumage. On page 212 of the twenty-fifth volume of the Catalogue of the birds in the British Museum, the late Howard Saunders described a female of the black-headed gull, obtained in England, that has the underparts, and even the shafts and webs of the primaries, suffused with a beautiful salmon-pink. On 16 October 1906 I received a female of this species, caught in the province of Groningen, which shows as to the shafts of the first 4 primaries the same peculiarity. A male, killed at Katwijk, 21 January 1908, had the breast and vent with a rosy tinge, which colour afterwards disappeared.

The so-called *Larus capistratus* Temminck cannot be upheld as a small race of this gull.

164. *Larus minutus* Pallas. [DWERGMEEUW].

This species, formerly breeding in our country, at present visits us only on migration. Every winter a few young specimens in first plumage and old specimens in winter plumage are killed. Old specimens in full dress, shot on spring migration, are rare. Since 1904 I received the following specimens:

♂, winter plumage, January 1905, province of Groningen.

♂, winter plumage, January 1906, province of Groningen.

♂, winter plumage, 5 December 1906, province of Groningen.

♂, first plumage, 19 January 1908, near den Helder.

♀, full dress, 1 May 1908, near Texel.

- ♀♀♀♀, full dress with beautiful rosy tinge on the under-surface, 4 May 1908, near Texel.
- ♀, with black head, but having still the brown wingcoverts of the first plumage, 12 May 1908, near Texel.
- ♂, first plumage, 1 June 1908, near den Helder.

165. *Rissa tridactylus* (L.). [DRIETEENIGE MEEUW].

We received only one specimen, a female, killed 3 December 1906 on the coast of Groningen. This gull is a regular, though not common winter visitant. In the collection van Wickevoort Crommelin is an old male, killed in June 1840 at Zandvoort, Noord-Holland.

166. *Xema sabinii* (Sabine). [SABINE'S VORKSTAARTMEEUW].

We possess of this species a young specimen in first plumage, that was presented to our collection in 1863 by the late Professor van Lidth de Jeude of Utrecht. This specimen is labelled by Schlegel »Mer du Nord'' (Schlegel, Cat. Lari, *Larus sabinei*, n^o. 2). It is an old, badly mounted example, and as it is from the collection van Lidth de Jeude, in which there were more rariora from the Netherlands, it is very likely, that the specimen has been killed in our country and that it is the very bird mentioned by Temminck in 1840 as »un jeune sur les côtes de Hollande'' (Man. d'Orn. 2^e éd. IV, 1840, p. 489).

In the Museum of the Zoological Garden at 's Gravenhage is a young male of this species, that has been shot on the shore near Hoek van Holland, 11 October 1892.

167. *Hydroprogne tschegrava* (Lepechin). [REUZENSTERN].

Of this in our country very rare species we possess two specimens: an adult one in winter plumage, not sexed, shot long time ago in autumn on Texel, very probably by Temminck, and an old female in summer plumage, shot 28 June 1847 on the Zijl, near Leiden, by H. Schlegel.

168. *Gelochelidon nilotica* (Hasselquist). [LACHSTERN].

The Museum received four specimens, an old male, two young males and a young female, killed 7 August 1908 on the sandbank »Onrust'' near Texel.

The old male is in breeding plumage, the young specimens are of different age; the oldest one, a male, has the bill dark grey and the base of the lower mandible olive-brown; in the two others the bill is dark grey and the base of the lower mandible pale orange.

We have still another example of this very rare visitor to our country: a male in perfect dress, shot 15 August 1838 on the Haarlemmermeer by H. Schlegel.

169. *Sterna fluviatilis* Naumann. [VISCHDIEFJE].

The Museum received 37 specimens in different plumage.

It seems that this species does not assume always its full plumage in the second year, for on 12 June 1908 a male and on 24 June 1908 a male and a female in winter plumage were killed near Texel. The dissection showed, that they were young birds of last year, the genitals being very small. The bill in these birds is black with a light horny tip and with some red at the base; the feet are dull dark red.

170. *Sterna macrura* Naumann. [NOORDSCHE STERN].

This species breeds on Texel in an equal number with *S. fluviatilis*. In June 1905 and 1906 I collected on Texel three adult males and four adult females and a young in down. As a rule on Texel *S. macrura* seems to lay two eggs, for all the birds, snared on the nests containing two eggs, belonged to *macrura*. On 20 October 1906 a young male in first plumage and on 31 July 1907 a young female in first plumage were killed on the coast of Groningen. On the Hoek van Holland, where a large colony of *S. fluviatilis* is breeding, *S. macrura* does not breed; I have shot there several terns, but none of this species.

171. *Sterna dougalli* Montagu. [DOUGALL'S STERN].

No specimen from the Netherlands in the collection. According to H. Albarda (Tijdschr. Ned. Dierk. Vereen. II, 1889, p. 15) 5 specimens have been caught in Friesland, 30 October 1886.

172. *Sterna cantiaca* Gmelin. [GROOTE STERN].

We received 6 specimens.

173. *Sterna minuta* L. [DWERGSTERN].

The Museum received 14 specimens, adult and young ones.

174. *Hydrochelidon nigra* (L.). [ZWARTE STERN].

We received 12 specimens, adult and young ones.

ALCIDAE.

175. *Alca torda* L. [ALK].

We received 16 specimens, adult and young ones. This bird is a common visitor to our country. Specimens in full dress with entirely black head however are not often met with; we possess only three specimens in this plumage, viz.:

♂, 5 June 1836, den Helder.

♂, 6 July 1858, Zandvoort.

♀, without exact locality, 12 April 1874.

In the collection of the late van Wickevoort Crommelin, there is no specimen in this perfect dress.

An adult male with nearly black head, having on the black throat and cheeks still some white feathers, was killed on Schouwen, province of Zeeland, 27 February 1907.

This year I received a young male, without white groove on the bill, in which the head is nearly black, the throat and cheeks being mixed with some white feathers. The bird was shot near Texel, 12 May 1908. A similar, but still younger male was shot near Texel, 21 August 1908.

176. *Uria troille* (L.). [ZEEKOET].

We received 17 specimens.

Specimens of this species in full plumage are observed more frequently on our shore than those of *Alca torda*. In this dress I received a male, killed January 1906 near den Helder, and a female, killed 13 March 1907 on Texel.

Of the variety *Uria ringvia* Brünnich [BASTAARDZEEKOET], we possess the following examples killed in Holland:

♂, full breeding plumage, 8 June 1861, Noordwijk.

♀, winter plumage, 11 February 1868, Noordwijk.

♀, winter plumage, 20 January 1887, Zandvoort.

♀, winter plumage, 24 November 1888, Zandvoort.

♂, winter plumage, 14 February 1889, Zandvoort.

The three last-quoted specimens make part of the collection van Wickevoort Crommelin (302—19, 20 and 21).

177. *Uria lomvia* (L.). [GROOTE ZEEKOET].

We possess a specimen in full plumage labelled by Temminck » *Uria brunnichii* — Mer du Nord" (Schlegel, Cat. Urinatores, *Alca arra*, n^o. 1). This is a true *lomvia*, having all the characters of this species. Very probably this example has been killed on our coast.

Albarda (*Aves Neerlandicae*, 1897, p. 111) states, that in the collection of Messrs. de Graaf, now in the Museum of the Zoological Garden at Amsterdam, is an example of this species. I have examined all the examples of *Uria* in that collection, but could not find however a *lomvia*.

178. *Cephus grylle* (L.). [ZWARTE ZEEKOET].

According to Temminck (*Man. d'Orn.* 1815, p. 610) a specimen has been found by Pallas on the coast of Holland. In the Museum of the Zoological Garden at Amsterdam is a specimen, found in December 1904 near den Helder.

179. *Alle alle* (L.). [KLEINE ALK].

This species does not visit Holland every year, in some winters no specimens are observed. The specimens, which have

been captured in Holland and belong to our collection, are all in winter plumage. Females seem to occur much more than males. We received a female, shot 3 January 1907 at Westernieland, Groningen, and a male, shot 7 January 1907 on Texel.

180. *Fratercula arctica* (L.). [PAPEGAAIDUIKER].

In the winter of 1906—'07 *F. arctica* has been observed more frequently than in other years. The Museum received two young females, both killed on Texel in the beginning of March 1907. Most of the birds observed in our country are young ones, quite adult birds occur very rarely. A nearly adult female was killed 28 February 1908 on the seashore near Noordwijk and purchased for the collection.

PTEROCLITIDAE.

181. *Syrrhaptes paradoxa* (Pallas). [STEPPEHOEN].

- We possess 18 examples killed in the Netherlands, viz.:
- ♀, 3 June 1863, Wassenaar, Zuid-Holland.
 - ♀, 17 June 1863, dunes of Zandvoort, Noord-Holland (Coll. van Wickevoort Crommelin, 163—1).
 - ♀, 17 June 1863, dunes of Zandvoort (Coll. van Wickevoort Crommelin, 163—2).
 - ♀, 11 July 1863, Noordwijk.
 - ♂, 5 September 1863, dunes of Zandvoort (Coll. van Wickevoort Crommelin, 163—3).
 - ♀, September 1863, Ameland. Preserved as skeleton.
 - ♀, 5 October 1863, dunes of Zandvoort (Coll. van Wickevoort Crommelin, 163—4).
 - ♀, 27 October 1863, Ameland. Presented by Mr. H. Albarda.
 - ♂, 13 February 1864, Noordwijkerhout, Zuid-Holland.
 - ♂, 25 May 1888, dunes of Zandvoort (Coll. van Wickevoort Crommelin, 163—5).
 - ♀, 25 May 1888, dunes of Zandvoort (Coll. van Wickevoort Crommelin, 163—6).

♀, 25 May 1888, dunes of Zandvoort (Coll. van Wickevoort Crommelin, 163—7).

♀, 13 June 1888, Anna Paulownapolder, Noord-Holland. Presented by Jhr. Mr. D. van Foreest.

♂, 24 August 1888, dunes of Zandvoort (Coll. van Wickevoort Crommelin, 163—8).

♀, 15 September 1888, Sassenheim, Zuid-Holland. Presented by Mr. C. J. Charbon.

♀, 13 November 1888, Noordwijk. Presented by Mr. F. A. Verster van Wulverhorst.

♂, Holland, 1888, without exact locality. Purchased from the Zoological Garden at Rotterdam. Preserved as skeleton.

♂, Holland, 1888, without exact locality. Has lived till 9 May 1889 in the Zoological Garden at Rotterdam.

We possess also three eggs of this species, which have been found 19 June 1888 in the Anna Paulownapolder and are presented to our collection by Jhr. Mr. D. van Foreest.

In June of this year examples of this species have been killed again in our country.

COLUMBIDAE.

182. *Columba palumbus* L. [WOUDDUIF].

We received 17 specimens. In the collection van Wickevoort Crommelin is a pale variation (158—4) and also one in our general collection, purchased from the cabinet van Lidth de Jeude (Schlegel, Cat. Columbæ, *Columba palumbus*, n^o. 16).

183. *Columba oenas* L. [KLEINE BOSCHDUIF].

We received four specimens:

adult ♂, 2 May 1906, Wassenaar, Zuid-Holland.

adult ♂, 12 May 1906, Amerongen, Utrecht.

adult ♂, 29 May 1906, Wassenaar.

young ♀, 18 September 1905, 's Gravenzande, Zuid-Holland.

184. *Turtur turtur* (L.). [TORTEL].

The Museum received three specimens.

CUCULIDAE.

185. *Cuculus canorus* L. [KOEKOEK].

We received 12 specimens, 6 old males, 4 young males and 2 young females. Old females we did not receive; these are very welcome to our collection.

STRIGIDAE.

186. *Asio otus* (L.). [RANSUIL].

We received 13 specimens, killed in the months August and October till March.

187. *Asio accipitrina* (Pallas). [VELDUIL].

This species is on migration not so common as the preceding one. We purchased 13 specimens, 8 males and 5 females, killed from September till April.

188. *Scops scops* (L.). [DWERGOORUIL].

There is no specimen shot in the Netherlands in the collection. In the Museum of the Zoological Garden at Rotterdam is a female, that was captured in September 1890 near that town. Mr. W. Geurtsen, praeparator at the School of Agriculture at Wageningen, informs me that he has stuffed in 1894 a specimen, that was shot that year near Wageningen. An old female was captured in the end of March 1906 near Gulpen, province Limburg (O. le Roi, Orn. Monatsb. 1908, p. 109).

189. *Nyctea nyctea* (L.). [SNEEUWUIL].

We possess no specimen killed in our country. About a dozen of examples have been observed in the Netherlands. According to Schlegel (Herklots, Bouwst. Faun. Ned. I,

1853, p. 64) there was an example of this owl, caught in 1806 at Amsterdam after a heavy north-western gale, in the cabinet of C. J. Temminck, which collection became in 1820 the foundations of our present Museum. This example is not more in the collection and it seems that it was already wanting in 1862, when Schlegel wrote his Catalogue of the Striges, for he did not make mention of it in that paper.

190. *Syrnium aluco* (L.). [BOSCHUIL].

We received only one specimen, a female, shot at Groesbeek, Gelderland, in January 1906.

191. *Athene noctua* (Scopoli). [STEENUIL].

8 specimens.

192. *Strix flammea* L. [KERKUIL].

(Plate 8).

We received eight specimens. A male, killed 1 May 1907 at Noordwijk, has the undersurface white with a few black spots, the others are light or dark orange-buff on the underparts, spotted with black. In the collection van Wickevoort Crommelin is a fine series of this owl; the two most interesting specimens are two old males, which have the underparts pure snowy white without any black spot; in one of them, killed 19 October 1869 at Vogelenzang (27—8) are even the feathers of the ruff nearly pure white, in the other one, killed 11 December 1885 at Hillegom (27—16), these feathers in the lower part are tipped with orange-buff and blackish brown. The upperparts in these two examples are very clear orange-buff mixed with light grey. The other examples in the collection have the underparts white, light or dark orange-buff or deep orange, more or less spotted with black.

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CAPRIMULGIDAE.

193. *Caprimulgus europaeus* L. [GEITENMELKER].

We received 8 specimens, 6 adults and 2 young in down.

MACROPTERYGIDAE.

194. *Apus apus* (L.). [GIERZWALUW].

Nine specimens, old and young ones, were received from July and August. The latest date we have in our collection is 16 August (1860), being a young male and female from Noordwijk. Last year (1907) these birds left us not before the 26th of August.

CORACIIDAE.

195. *Coracias garrulus* L. [SCHARRELAAR].

This species is a very rare straggler to our country. We possess no specimen killed in the Netherlands.

ALCEDINIDAE.

196. *Alcedo ispida* L. [IJSVOGEL].

We received 8 specimens.

197. *Ceryle alcyon* (L.). [AMERIKAANSCH E BANDIJSVOGEL].

Once observed. December 17th 1899 a male has been shot near de Steeg, province Gelderland (Snouckaert, Tijdschr. Ned. Dierk. Vereen. VI, 1900, p. 267).

MEROPIDAE.

198. *Merops apiaster* L. [BIJENETER].

Once observed. A female, caught 4 May 1905 at Tietjerk, province Friesland, is in the possession of the Zoological Garden at Amsterdam.

UPUPIDAE.

199. *Upupa epops* L. [HOP].

In the latter years we did not receive a specimen. This species has become much more rare than formerly. We possess 9 adult specimens from the provinces Noord- and Zuid-Holland, killed in April, July, August and September; one adult specimen, labelled only Holland, purchased from the cabinet van Lidth de Jeude; an old female from Valkenswaard, Noord-Brabant, 11 June 1861, and four nestlings from St. Oedenrode, Noord-Brabant, 15 July 1859, presented by Mr. Buddingh.

PICIDAE.

200. *Picus martius* L. [ZWARTE SPECHT].

We purchased a female that, according to its owner, a bird-seller at Rotterdam, has been shot at Zuidlaren, province Drenthe, 12 October 1901. When this is true, this example is the first document for the occurrence in the Netherlands, for, though the bird since long has been inserted in the list of our birds, there was no specimen to be found in a public or private collection.

201. *Dendrocopus major* (L.). [GROOTE BONTE SPECHT].

9 specimens.

202. *Dendrocopus medius* (L.). [MIDDELSTE BONTE SPECHT].

Of this species we have no specimen shot in our country. The bird is very rare and has been observed only a few times.

203. *Dendrocopus minor* (L.). [KLEINE BONTE SPECHT].

We possess the following specimens:

♂, 26 December 1880, Elburg, Gelderland.

♂, 7 April 1890, Tubbergen, Overijssel.

♂, 11 February 1891, Vorden, Gelderland (Coll. van Wickevoort Crommelin, 194—3).

- ♀, 31 January 1901, Vogelenzang, Noord-Holland.
 ♂, 21 October 1903, Leiden.
 ♂, 27 January 1906, Zoeterwoude, Zuid-Holland.
 ♂, 22 March 1906, Wageningen, Gelderland.
 ♀, 15 February 1907, Zoeterwoude.

204. *Gecinus viridis* (L.). [GROENE SPECHT].

We received eleven specimens, adult and young ones.

205. *Gecinus canus* (Gmelin). [KLEINE GROENE SPECHT].

We have no specimen killed in the Netherlands in our collection. According to Schlegel this bird is said to have been observed in our country.

206. *Jynx torquilla* L. [DRAAIHALS].

We did not receive a specimen in the latter years. We have examples from Hoek van Holland, Leiden, Wassenaar, Noordwijk, Dordrecht, Hillegom, Bloemendaal, Santpoort, Harderwijk, Zoest and Zeist, from the latter locality two nestlings.

HIRUNDINIDAE.

207. *Hirundo rustica* L. [BOERENZWALUW].

We received 5 specimens. Four adult birds in our collection have the underparts rather rufous: ♂, 9 July 1859, Leiden — ♀, 8 May 1860, near Leiden — ♂, 15 May 1890, Santpoort (Coll. van Wickevoort Crommelin, 47—4) and ♂, 28 June 1892, Zoeterwoude; the latter specimen has a large chestnut spot in the pectoral band; the markings in the tail in all the four specimens are white. We possess further five whitish examples, all having a pale chestnut throat: ♀, 17 July 1842, Leiden — ♀, 9 September 1863, Haarlemmermeer — ♂, 13 October 1871, Rotterdam — ♀, 24 September 1888, Noordwijkerhout and ♂, September 1896, Schiedam.

208. *Delichon urbica* (L.). [HUISZWALUW].

12 examples.

209. *Riparia riparia* (L.). [OEVERZWALUW].

3 specimens.

MUSCICAPIDAE.

210. *Muscicapa grisola* L. [GRAUWE VLIEGENVANGER].

10 specimens.

211. *Muscicapa atricapilla* L. [ZWARTGRAUWE VLIEGENVANGER].

Three young specimens.

212. *Muscicapa collaris* Bechstein. [WITGEHALSDE VLIEGENVANGER].

The Museum possesses only two examples shot in our country: a young male captured at Leiden and presented in 1859 by Mr. A. A. van Bemmelen, and a female, shot 4 September 1889 at Lisse, presented by Mr. E. Blaauw.

213. *Siphia parva* (Bechstein). [DWERGVLIEGENVANGER].

We have no stuffed specimen or skin of this species, only the skeleton of an example, that has been shot 27 September 1901 at Overschie, Zuid-Holland, and is presented to our collection by Bn. R. Snouckaert van Schauburg (van Oort, Cat. Ost. Ois. 1907, p. 208, *Siphia parva*—a).

TURDIDAE.

214. *Turdus merula* L. [ZWARTE LIJSTER].

We received 21 examples. We have eight specimens, adult males and females and youngs, with more or less white in the plumage. A female in the collection van Wickevoort Crommelin (63—19) is pale light brown. The most inte-

resting variation we possess is a female in our old collection; this bird has been captured in our country, the exact locality or date is not known. The upperparts are pale grey, barred with dark greyish brown, throat and breast as in a female *merula*, but more rufous; undertailcoverts greyish brown, barred with greyish white; bill yellowish.

215. *Turdus torquatus* L. [BEFLIJSTER].

We purchased 16 specimens, only one from April, the others from October.

216. *Turdus pilaris* L. [KRAMSVOGEL].

The Museum received 15 specimens. Of a male in the collection van Wickevoort Crommelin (58—5) the breast is less spotted than usually and the feathers of the sides of the breast and of the flanks are brownish, instead of black with whitish margins.

217. *Turdus viscivorus* L. [GROOTE LIJSTER].

6 specimens.

218. *Turdus musicus* L. [ZANGLIJSTER].

Eleven specimens. In our old collection is a female, shot 16 October 1864 at Leiden, with four white primaries in each wing, two white central tailfeathers, a white patch on the head, and the groundcolour of all the underparts pure white. In 1883 the late H. Albarda presented to our collection a male, shot 1 November 1883 at Leeuwarden, being of a pale brown colour, but having all the markings of a normal bird.

219. *Turdus iliacus* L. [KOPERWIEK].

We received 10 specimens, killed from September till April. In our old collection is a male, shot 20 August 1864 near Leiden.

220. *Turdus iliacus coburni* Sharpe. [IJSLANDSCHE KOPERWIEK].

According to Bn. Snouckaert van Schauburg the iceland form of this thrush has occurred in the province Utrecht, a specimen being shot by him on 15 March 1905 at Neerlangbroek (Tijdschr. Ned. Dierk. Vereen. X, 1908, p. 290).

221. *Turdus naumanni* Temminck. [NAUMANN'S LIJSTER].

We possess a specimen in winter plumage, that long ago has been captured near Utrecht. The bird is purchased in 1866 from the cabinet van Lidth de Jeude. It is mentioned under the name of *Turdus ruficollis* Pallas by Albarda in his »Aves Neerlandicae'', 1897, p. 37.

222. *Turdus obscurus* Gmelin. [VALE LIJSTER].

In the collection van Wickevoort Crommelin is a young specimen, captured 27 October 1843 at Velserbeek near Velsen, Noord-Holland (61—1).

223. *Turdus dubius* Bechstein. [BRUINE LIJSTER].

According to Bn. Snouckaert van Schauburg a male has been shot 20 November 1899 at Veenwouden, Friesland (Tijdschr. Ned. Dierk. Vereen. VI, 1900, p. 261).

224. *Geocichla sibiricus* (Pallas). [SIBERISCHE LIJSTER].

We possess a young specimen, probably a male in change, that has been captured in the autumn of 1854 near Paterswolde, Groningen.

225. *Phoenicurus phoenicurus* (L.). [GEKRAAGD ROODSTAARTJE].

We received seven specimens. In the collection van Wickevoort Crommelin is a female, shot 24 May 1869 at Santpoort (72—11), in which chin and throat are black and breast and flanks pale orange-red; the upperparts are

more greyish than usually and there are some white feathers on the forehead.

A male in the same collection (72—12), shot 3 May 1878 at Santpoort, has all the orange-red parts of the body buff-white.

226. *Phoenicurus titys* (L.). [ZWART ROODSTAARTJE].

We possess the following specimens from the Netherlands: adult ♂, 30 October 1875, dunes of Vogelenzang, Noord-Holland (Coll. van Wickevoort Crommelin, 71—2); nestling, 1 June 1876, Leiden; from a nest build in a hole of a wall at the inner-court of the Museum of Natural History;

♂, 24 October 1889, Noordwijkerhout, Zuid-Holland. Preserved as skeleton;

adult ♀, 2 November 1898, near 's Gravenhage;

adult ♂, spring 1903, Alkemade, Zuid-Holland;

adult ♀, 10 April 1906, Wageningen, Gelderland;

adult ♂, 24 April 1906, Wageningen;

adult ♂, 1 May 1906, Wageningen. This example is still in the female plumage, the so-called *cairei*-form.

227. *Cyanecula suecica* (L.). [ROODVLEKBLAUWBORSTJE].

We possess no specimen shot in Holland. This species has been observed a few times in our country, f. i. a male, caught 7 May 1886 at Nunspeet, province Gelderland, is preserved in the Museum of the Zoological Garden at Amsterdam.

228. *Cyanecula suecica cyanecula* (Wolf). [BLAUWBORSTJE].

We possess the following specimens killed in the Netherlands, the old males having all a white patch in the blue breast:

5 nestlings from the same nest, 20 March 1861, Valkenswaard, Noord-Brabant;

adult ♂, 29 April 1861, Valkenswaard;

adult ♂, 2 May 1861, Valkenswaard;

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adult ♀, 7 May 1861, Valkenswaard;
 2 nestlings, 7 May 1861, Valkenswaard;
 adult ♀, 8 May 1861, Valkenswaard;
 adult ♂, 9 May 1861, Valkenswaard; (this specimen has
 some rufous feathers in the white patch);
 adult ♂, 31 May 1861, Valkenswaard;
 adult ♂, 15 March 1881, Deventer. Presented by Dr. L.
 A. J. Burgersdijk;
 adult ♀, 20 March 1885, near 's Gravenhage. Lived there
 till 20 May 1885 in the Zoological Garden (Coll. van
 Wickevoort Crommelin, 73—5);
 adult ♂, 27 June 1887, province Gelderland, without
 exact locality.

229. *Aëdon lusciniæ* (L.). [NACHTEGAAL].

We received three specimens.

230. *Erithacus rubecula* (L.). [ROOBBORSTJE].

We received 13 specimens.

231. *Pratincola rubetra* (L.). [PAAPJE].

5 specimens. In the collection van Wickevoort Crommelin is a nearly white example, a male, shot 11 September 1884 at Vogelenzang, Noord-Holland (68—8).

232. *Pratincola rubicola* (L.). [ROOBBORSTTAPUIT].

4 specimens.

233. *Saxicola oenanthe* (L.). [TAPUIT].

We received 22 specimens. A pale, whitish brown specimen is in the collection van Wickevoort Crommelin; it is a male, shot 20 September 1882 on the dunes at Vogelenzang (66—9). The wings of specimens, which are breeding in our country, measure in males from 89 to 97 mm., in females from 87 to 93 mm. At the 18th of May 1906, however, I shot on the dunes of Wassenaar a large

female, wings 97 and 98 mm.; probably this is a northern bird, still on migration.

On migration in autumn there have been killed in our country more specimens with longer wings than those of our breeding birds. They all are probably northern birds, the true *Saxicola oenanthe* (L.), while the breeding birds of our country seem to belong, very probably, to a different subspecies, having shorter wings and as a rule a narrower black band at the tail (*Saxicola oenanthe grisea* Brehm, cf. O. Kleinschmidt, Berajah, 1905).

We possess three such specimens, viz.:

- young ♂, 9 September 1854, dunes at Zandvoort, Noord-Holland (Coll. van Wickevoort Crommelin, 66—3; wings 101 and 102, tail 59 mm.);
- young ♂, 10 September 1863, near Leiden (wing 102, tail 59 mm.);
- young ♂, 6 September 1906, Texel (wing 100, tail 61 mm.).

234. *Saxicola oenanthe leucorhoa* (Gmelin). [LANGVLEUGEL-TAPUIT].

There are three examples in our collection, which appear to me to be the true long-winged Greenland form, viz.:

- adult ♂, in the rufous autumn plumage, labelled only „Hollande” (wing 105, tail 69, bill 13 mm.);
- young ♂, shot 29 March 1880 at Katwijk (wing 105, tail 65, bill 14 mm.);
- adult ♀, shot 27 April 1862 at Bloemendaal, Noord-Holland (Coll. van Wickevoort Crommelin, 66—6; wings 102 and 103, tail 62, bill 12 mm.).

235. *Saxicola stapazina* (L.). [BLONDE TAPUIT].

We have no specimen from the Netherlands. According to H. Schlegel (Herklots, Bouwst. Faun. Ned. II, 1858, p. 209 — Schlegel, Vogels v. Ned. 1854—58, p. 168) and N. Groenewegen (Herklots, Bouwst. Faun. Ned. II, 1858, p. 289) this species has been killed in our country. On the

authority of these gentlemen I insert the bird in this list, though there seems to be in no collection a specimen from our country (cf. Snouckaert, Tijdschr. Ned. Dierk. Vereen. VII, 1902, p. 259).

236. *Accentor modularis* (L.). [BASTAARDNACHTEGAAL].

9 specimens.

SYLVIIDAE.

237. *Sylvia sylvia* (L.). [GRASCHMUSCH].

4 specimens.

238. *Sylvia curruca* (L.). [BRAAMSLUIPER].

4 specimens.

239. *Sylvia simplex* Latham. [TUINFLUITER].

3 specimens.

240. *Sylvia atricapilla* (L.). [ZWARTKOPTUINFLUITER].

2 specimens.

241. *Sylvia nisoria* (Bechstein). [SPERWERGRASMUSCH].

We possess the two only specimens, which have been killed in the Netherlands, viz.:

♂, 18 May 1860, Haren near Groningen. Presented by Mr. G. S. de Graaf.

♀, 15 April 1861, Haren near Groningen. Presented by the same gentleman. (See for these two specimens the communication of Mr. H. W. de Graaf in Tijdschr. Ned. Dierk. Vereen. VIII, 1904, p. 96).

242. *Phylloscopus collybita* (Vieillot). [TJIFTJAF].

8 specimens.

243. *Phylloscopus trochilus* (L.). [FITIS].

10 specimens.

244. *Phylloscopus sibilatrix* (Bechstein). [FLUITER].

This species I did not receive in the latter years. In the general collection there are no specimens from the Netherlands; in the collection van Wickevoort Crommelin are three specimens.

245. *Phylloscopus superciliosa* (Gmelin). [GRAUWSTUIT-BOSCHZANGER].

We possess no specimens from the Netherlands. This species has been observed two or three times.

246. *Hypolais hypolais* (L.). [SPOTVOGEL].

6 specimens.

247. *Acrocephalus arundinaceus* (L.). [GROOTE KAREKIET].

Of this common bird we did not receive a specimen.

248. *Acrocephalus strepera* (Vieillot). [KLEINE KAREKIET].

2 specimens.

249. *Acrocephalus palustris* (Bechstein). [BOSCHRIETZANGER].

1 specimen.

250. *Calamodus schoenobaenus* (L.). [RIETZANGER].

2 specimens.

251. *Calamodus aquatica* (Gmelin). [WATERRIETZANGER].

No specimen killed in the Netherlands in the collection. This species has been observed three times. Already in 1820 Temminck has mentioned the bird as being »très-rare et accidentellement en Hollande”.

252. *Locustella luscinioides* (Savi). [NACHTEGAALBIETZANGER].

Of this species, which is still breeding in our country, we possess the following specimens killed in the Netherlands: ♂, shot near Utrecht, without date. This specimen must have been shot after the year 1835, for Temminck does not mention this bird in his „Manuel d'Ornithologie" III, 1835, p. 119, as occurring in our country.

♂, 28 June 1859, Kralingermeer near Rotterdam.

♂, 27 April 1860, Kralingermeer near Rotterdam (Coll. van Wickevoort Crommelin, 82—1).

♂, 28 April 1861, Kralingermeer near Rotterdam.

♀, 26 May 1861, » » »

♂♂♂♂, 15 April 1862, » » »

We possess further only one egg from the Kralingermeer, found in 1849, and one with the nest, from Eernewoude, province Friesland, 14 July 1893, and also 4 nests from the Kralingermeer.

253. *Locustella naevia* (Boddaert). [SPRINKHAANRIETZANGER].

In the collection van Wickevoort Crommelin are five specimens from the neighbourhood of Haarlem (81—1 to 5) and in our old collection are two specimens, one from Haarlem and one from Warmond, Zuid-Holland. In the latter years we did not receive this species.

CINCLIDAE.

254. *Cinclus cinclus* (L.). [ZWARTBUIKWATERSPREEUW].

We possess two specimens of the northern black-bellied dipper, killed in our country, viz.:

an adult one, without sex, shot March 1833 at Hillegom, presented by Baron van Tuyll;

an adult male, shot 26 October 1887 at Heemstede near Haarlem (Coll. van Wickevoort Crommelin, 94—3).

The specimen caught November 1759 near Bloemendaal, mentioned by Nozeman (Uitgezogte Verhandelingen, V, 1760, p. 68), belonged also to this northern form. Schlegel

gives is his »Vogels van Nederland” on plate 66 a figure of *Cinclus cinclus aquaticus* Bechstein, but this figure is not made after a specimen killed in our country, for, when Schlegel wrote his work, the only specimens known to have been killed in the Netherlands were the specimen of Nozeman, figured on plate 14 in Nozeman’s great work (C. Nozeman, *Nederlandsche Vogelen*, I, 1770, p. 20 pl. 14) and the above-named adult bird shot at Hillegom.

255. *Cinclus cinclus aquaticus* Bechstein. [WATERSPREEUW].

A specimen, caught at Vlijmen, province Noord-Brabant, preserved in the Museum of the Zoological Garden at Amsterdam, seems to me to belong to this form. We don’t possess this subspecies from our country.

TROGLODYTIDAE.

256. *Anorthura troglodytes* (L.). [WINTERKONINKJE].

8 specimens.

MOTACILLIDAE.

257. *Motacilla alba* L. [WITTE KWIKSTAART].

5 specimens.

258. *Motacilla alba lugubris* Temminck. [ROUWKWIKSTAART].

This subspecies we did not receive in the latter years. We possess besides specimens of the true *lugubris* killed in the Netherlands in the months March and May, also some specimens intermediate between *alba* and *lugubris*. The subspecies and the intermediate form are breeding in our country in the western part.

259. *Motacilla boarula* L. [GROOTE GELE KWIKSTAART].

This species we did not receive. Altogether we possess only 7 specimens killed in the months October, December, February and March.

260. *Motacilla flava* L. [GELE KWIKSTAART].

13 specimens.

261. *Motacilla flava borealis* Sundevall. [NOORDSCHE GELE KWIKSTAART].

We possess an adult male, killed 10 May 1855 near Leiden, and an adult female, shot 14 May 1864 near Bloemendaal, Noord-Holland (Coll. van Wickevoort Crommelin, 99—1).

262. *Motacilla flava rayi* (Bonaparte). [ENGELSCHE GELE KWIKSTAART].

We possess four specimens, all in the collection van Wickevoort Crommelin (100—1 to 4):

♂, 14 May 1864, near Bloemendaal, Noord-Holland.

♂, 16 April 1873, Zandvoort, Noord-Holland.

♂, 20 April 1875, Santpoort, Noord-Holland.

♂, 31 July 1888, near 's Gravenhage, Zuid-Holland.

263. *Anthus pratensis* (L.). [GRASPIEPER].

13 specimens.

264. *Anthus trivialis* (L.). [BOOMPIEPER].

10 specimens.

265. *Anthus campestris* (L.). [DUINPIEPER].

No specimen received in the latter years.

266. *Anthus spinoletta* (L.). [WATERPIEPER].

We possess two specimens, a female killed 25 October 1862 in the province Zuid-Holland (Coll. van Wickevoort Crommelin, 104—2), and a male killed 25 October 1862 in the province Zuid-Holland (Coll. van Wickevoort Crommelin, 103—2, s. n. *Anthus obscurus*).

267. *Anthus obscura rupestris* Nilsson. [OEVERPIEPER].

This pipit is a common visitor to our shore in winter. We received three specimens killed in October, December and January. As the specimens in our collection shot in March and April have a reddish tinge on the breast, it seems that the rock-pipit, which visits the Netherlands, belongs to the Scandinavian form.

268. *Anthus richardi* Vieillot. [GROOTE PIEPER].

We possess the following specimens:
 young ♀, October 1841, near Haarlem;
 adult, 1 October 1857, Ridderkerk a/d IJssel, Zuid-Holland;
 young ♂, 24 October 1890, 's Gravenzande, Zuid-Holland;
 adult ♂, 26 October 1898, dunes near 's Gravenhage.

ALAUDIDAE.

269. *Alauda arvensis* L. [LEEUWERIK].

14 specimens, among which a pure albino, a female, shot 16 September 1906 on Texel. In the collection van Wickevoort Crommelin is also an albino, a male, shot 24 October 1877 at Haarlemmermeer, Noord-Holland (107—5).

270. *Lullula arborea* (L.). [BOOMLEEUWERIK].

5 specimens.

271. *Galerida cristata* (L.). [KUIFLEEUWERIK].

5 specimens.

272. *Eremophila alpestris flava* (Gmelin). [BERGLEEUWERIK].

We received 11 specimens. This species is a regular winter visitor.

AMPELIDAE.

273. *Ampelis garrulus* L. [PESTVOGEL].

Since 1904 we received only one specimen, a female, shot 25 February 1905 at Vogelzang, Noord-Brabant.

LANIIDAE.

274. *Lanius excubitor* L. [KLAPEKSTER].

We received three specimens. We possess 23 specimens from the Netherlands, among which are nestlings from Valkenswaard, Noord-Brabant.

Birds with only one wing-speculum are not rarely met with.

275. *Lanius minor* Gmelin. [KLEINE KLAPEKSTER].

No specimen killed in the Netherlands in our collection. In the collection of the Zoological Garden at Rotterdam is a male, that has been shot in October 1859 or 1860 near Rotterdam; this is till yet a unicum for our country.

276. *Lanius collurio* L. [GRAUWE KLAUWIER].

We received 11 specimens.

277. *Lanius senator* L. [ROODKOPKLAUWIER].

This bird we did not receive. We possess adult specimens, shot in May and June, from Zutphen and Valkenswaard, and a young specimen shot in August at Noordwijk.

PARADOXORNITHIDAE.

278. *Panurus biarmicus* (L.). [BAARDMANNETJE].

We received only one example. This species is on several places still a common breeding bird, a large number is caught every year in autumn.

PARIDAE.

279. *Parus major* L. [KOOLMEES].

15 specimens.

280. *Parus coeruleus* L. [PIMPELMEES].

22 specimens.

281. *Parus ater* L. [ZWARTE MEES].

2 specimens.

282. *Parus cristatus mitratus* Brehm. [KUIFMEES].

1 specimen. We possess further only 7 specimens from our country.

283. *Parus communis longirostris* Kleinschmidt. [GLANSKOPPIGE ZWARTKOPMEES].

We received 14 specimens, adult ones, killed in the months January to April and in August and October, all presented by Bn. Snouckaert van Schauburg. We had only one example of this form from our country, a male, shot 10 December 1889 at Voorschoten, Zuid-Holland. The bird, that Nozeman (Nederlandsche Vogelen, I, 1770, p. 47, plate, the female) and Schlegel (Vogels van Nederland, 1854—58, p. 251, pl. 129) called *Parus palustris*, does not belong to this form, but is *Parus montanus salicarius* Brehm. When Schlegel wrote his „Vogels van Nederland” there were no specimens of the present form, killed in the Netherlands, in the collection of the Museum, only examples of *P. m. salicarius* Brehm. After Schlegel all the marsh-tits from the Netherlands were called *Parus palustris*. Kleinschmidt in 1897 (Ornith. Jahrb. VIII, 1897, p. 45, and Journ. für Ornith. 1897, p. 112) pointed out very clearly the occurrence of two different species of these tits in Germany, and Hartert in 1905 (Vög. paläarkt. Faun. Heft III, 1905) could mention with certainty two different

species of marsh-tits from our country. Bn. Snouckaert van Schauburg, who made a research into the same matter, found also the two species mentioned by Hartert and could add as a third form another subspecies of one of them. The result of his researches is to be found in „Verslagen en Mededeelingen Ned. Orn. Vereen.” n^o. 3, November 1906, p. 3, and in „Ornith. Jahrb.,” XVII, 1906, p. 204.

284. *Parus montanus salicarius* Brehm. [MATKOPPIGE ZWARTKOPMEES].

We received 5 specimens. We possess altogether 22 specimens, adult ones and nestlings, from the Netherlands, among which are 6 in the collection van Wickevoort Crommelin under the name of *Parus palustris* L. (142—1 to 6, in the manuscript catalogue of van Wickevoort Crommelin named *Parus palustris* L. var. *fruticeti* Wallengren).

285. *Parus montanus borealis* de Selys Longchamps. [NOORDSCHE MATKOPPIGE ZWARTKOPMEES].

According to Bn. Snouckaert van Schauburg a specimen of this northern race has been killed in Noord-Brabant (Snouckaert, Verslagen en Mededeelingen Ned. Orn. Vereen. n^o. 3, November 1906, p. 3).

286. *Aegithalos caudatus europaeus* (Hermann). [STAARTMEES].

6 specimens. We possess 43 specimens from our country.

CERTHIIDAE.

287. *Certhia brachydactyla* Brehm. [BOOMKRUIPERTJE].

10 specimens. All examples in our collection belong to one and the same form, *brachydactyla* Brehm. We possess a series of 40 specimens from the Netherlands. Already in 1852 Schlegel stated that all the specimens killed in the province Zuid-Holland belonged to the race, called by Brehm *Certhia brachydactyla* (Herklots, Bouwst. Faun. Ned. I, 1853, p. 74, note).

Hartert (Vög. paläarkt. Faun. Heft III, 1905, p. 320) states, that all the tree-creepers from the Netherlands seen by him, belong to *C. brachydactyla*. Also Mr. Snouckaert, who has examined a, tolerably small, number of specimens from different parts of our country, has found only the present form (Snouckaert, Verslagen en Mededeelingen Ned. Orn. Vereen. n^o. 3, November 1906, p. 8).

SITTIDAE.

288. *Sitta europaea caesia* Wolf. [BOOMKLEVER].

7 specimens.

REGULIDAE.

289. *Regulus regulus* (L.). [GOUDHAANTJE].

14 specimens.

290. *Regulus ignicapilla* Temminck. [VUURGOUDHAANTJE].

We received only one specimen. This species is however on migration not at all rare.

CORVIDAE.

291. *Corvus corone* L. [KRAAI].

A pale brown variation, a female, was shot 10 February 1908 on the island of Texel in much worn plumage. Iris grey, bill and legs greyish brown. We received further 23 specimens.

292. *Corvus cornix* L. [BONTE KRAAI].

13 specimens. In the collection van Wickevoort Crommelin is a specimen with some white primaries and secondaries in each wing, shot 17 January 1891 at Vogelenzang, Noord-Holland (32—5).

Hybrid between *Corvus corone* L. × *Corvus cornix* L.

At October 26th 1907 I shot at Zoeterwoude near Leiden

a female hybrid between these two species. The bird resembles *Corvus corone*, only the middle of the lower breast and of the belly are dark grey; the wing measures 300 mm.

293. *Corvus corax* L. [RAAF].

We received only one specimen, a young female, shot 11 August 1908 at Oegstgeest near Leiden.

294. *Corvus frugilegus* L. [ROEK].

The Museum received 29 specimens. On a country seat at Oegstgeest in the neighbourhood of Leiden a large number of rooks are nesting every year. In May 1907 several young ones were killed, among which there were two specimens, having a white chin and throat, and one specimen having a white chin. In one of the first specimens some of the feathers covering the nostrils are also white.

At the same spot two breeding females were shot, one April 17th 1906, the other April 11th 1907, which have chin and throat totally feathered and also the nostrils covered with feathers. In April 1905 and 1907 breeding females with partially feathered throats and with covered nostrils have been killed at the same place.

295. *Coloeus monedula* (L.). [KAUW].

15 specimens. A male, shot 7 May 1891 at Vogelenzang, Noord-Holland, has the inner primaries, the secondaries and the greater coverts brownish (Coll. van Wickevoort Crommelin, 34—9). There are in the collection further 5 specimens with more or less white feathers in the plumage. We don't possess pure albinos from our country.

296. *Nucifraga caryocatactes macrorhynchos* Brehm. [NOTENKRAKER].

We possess 26 specimen killed in the Netherlands, which belong all to the thin-billed form. The dates are September 1844, September 1848, October 1859, September and October

1864, September and October 1868 and 1880, October 1885, September and November 1888 and October 1900.

297. *Pica pica* (L.). [EKSTER].

16 specimens. In the collection van Wickevoort Crommelin is a male, shot 15 April 1853 at Berkenrode near Haarlem (35—2), in which the black of the plumage is replaced by a more or less dark brown without any gloss.

298. *Garrulus glandarius* (L.). [VLAAMSCHE GAAI].

24 specimens. A specimen with some white feathers in both wings, shot 10 November 1874 at Hillegom, Zuid-Holland, is in the collection van Wickevoort Crommelin (36—6).¹⁾

ORIOLIDAE.

299. *Oriolus oriolus* (L.). [WIELEWAAL].

We received eight specimens, among which are two males, already paired, bearing still the immature plumage resembling that of the female, shot 19 and 21 May. A male in the old collection, labelled 7 June 1863, Holland (Schlegel, Cat. Coraces, *Oriolus galbula*, n^o. 9) has the lower back streaked with black. We possess only two old females with yellow, almost unstreaked undersurface.

STURNIDAE.

300. *Sturnus vulgaris* L. [SPREEUW].

We received 38 specimens, among which one albino, a young female, shot 13 June 1905 at Oud-Beijerland, Zuid-Holland. A pale brownish female was shot in October 1840 at Noordwijk.

1) In April of this year Baron Snouckaert van Schauburg wrote to me, that he had seen a stuffed specimen of *Pyrrhocorax graculus* (L.), that is said to have been killed in our country.

301. *Pastor roseus* (L.). [ROSÉSPREEUW].

We possess three specimens killed in the Netherlands: old female, 14 July 1856 near Bloemendaal, Noord-Holland (Coll. van Wickevoort Crommelin, 39—2); old male, 15 April 1874, province Noord-Brabant (Coll. van Wickevoort Crommelin, 39—3); young male, 27 September 1894 near Leiden, presented by Mr. G. S. van der Spruyt.

FRINGILLIDAE.

302. *Fringilla coelebs* L. [VINK].

26 specimens. In the collection van Wickevoort Crommelin are three pale variations, all females (119—1, 7 and 12) and a female (119—5) darker coloured than usually. A male in the same collection (119—11) has a white forehead and white feathers in the wings, while another male (119—4) has rump, lesser wingcoverts and axillaries tinged with yellow.

Hybrid between *Fringilla coelebs* L. × *Fringilla montifringilla* L.

We possess a hybrid between these species, a male, caught 31 October 1898 near 's Gravenhage, presented to our collection by Mr. W. J. Heyligers. The bird resembles more *coelebs* than *montifringilla*. As to head, scapulars, wings and rump it resembles *montifringilla*, the rump however is not white but yellow.

303. *Fringilla montifringilla* L. [KEEP].

11 specimens. In the collection van Wickevoort Crommelin is a pale specimen (120—9), labelled ♂ but probably a female, caught 1 October 1889 at Vogelenzang, Noord-Holland.

304. *Cannabina cannabina* (L.). [KNEU].

14 specimens, among which a nearly white specimen, a

female, with only some normal feathers on the forehead, in the wings and in the tail. The specimen is caught in 1904 in the Netherlands and presented to our collection by Mr. F. E. Blaauw.

305. *Aegiothus flavirostris* (L.). [FRATERTJE].

8 specimens.

306. *Aegiothus linaria* (L.). [BARMSIJSJE].

5 specimens. We have a tolerably large series of specimens killed in the Netherlands, among which some are as large as *holboellii*, others as small as *cabaret*.

307. *Aegiothus linaria holboellii* (Brehm). [LANGSNAVELIG BARMSIJSJE].

We have only three specimens, which are typical *holboellii*, all males, shot out of flocks of *linaria*.

308. *Aegiothus linaria cabaret* (P. L. S. Müller). [KLEIN BARMSIJSJE].

We possess eleven specimens of this form, 8 in the old collection from November 1861 and January 1862 near Leiden, and three specimens in the collection van Wickevoort Crommelin (124—2, 3 and 4).

309. *Carduelis carduelis* (L.). [PUTTER].

We received only two males. In 1896 Mr. W. J. Heyligers presented to the Museum three very dark specimens, in which the head is black without white and almost without scarlet; they were caught near Maastricht, Limburg. A specimen caught in 1847 in Friesland and presented to the Museum in 1863 by Mr. H. Albarda, has no scarlet at the head, the feathers being there white with black bases. In the collection van Wickevoort Crommelin is a female (125—1), caught in the winter of 1850 in our country, in which the chin and throat are white instead of scarlet.

310. *Chrysomitris spinus* (L.). [SIJSJE].

8 specimens.

311. *Passer domestica* (L.). [HUISMUSCH].

17 specimens, among them a pure albino, a male, killed 23 August 1905 on Texel and a melanistic form, a female, killed 20 November 1905 in Leiden, in which the whole plumage is much darker than usually. A male, labelled only Holland, has the black patch on throat and breast mixed with brown.

312. *Passer montana* (L.). [RINGMUSCH].

11 specimens. In the collection van Wickevoort Crommelin is a male (132—1) shot November 1850 in our country, exact locality not mentioned, that is very pale, strongly resembling the subspecies *Passer montana dilutus* Richmond from Turkestan. A female in the same collection (132—5) shot 23 October 1860 at Overveen, Noord-Holland, has the same light coloration. A male, caught 21 October 1867 (Coll. van Wickevoort Crommelin, 132—7) has the feathers of back and wings whitish with ferruginous edgings; the tail is whitish, the head normally coloured. A young female in our general collection, caught November 1860 near Rotterdam and presented by Mr. J. G. Keulemans is very pale in coloration and variegated with white. An adult specimen, labelled only „Holland”, purchased in 1866 from the Cabinet van Lidth de Jeude has the head a little paler than normally, the black markings on earcoverts and throat brown, the uppersurface pale brown with ferruginous margins to the feathers.

313. *Petronia petronia* (L.). [ROTSMUSCH].

We possess a young specimen, without sex, labelled only Holland, that is purchased in 1866 from the Cabinet van Lidth de Jeude. It is very probably the bird, mentioned by Schlegel as having been caught near Harderwijk, Gelderland.

314. *Serinus serinus* (L.). [EUROPEESCHE KANARIE].

We possess no specimen from the Netherlands. Already in 1815 Temminck mentioned the bird as having been observed in our country. Specimens have been killed in autumn, winter and spring.

315. *Loxia curvirostra* L. [KRUISBEK].

In the latter years we did not receive this species.

316. *Loxia pytyopsittacus* Borkhausen. [GROOTE KRUISBEK].

No specimen received; altogether we possess 16 specimens killed in the Netherlands.

317. *Loxia bifasciata* (Brehm). [WITBANDKRUISBEK].

We possess two specimens, males, caught 17 September 1889 near Bloemendaal (Coll. van Wickevoort Crommelin, 137—3 and 4).

318. *Pinicola enucleator* (L.). [HAAKBEEK].

Only one specimen is recorded to have been observed in the Netherlands, a male, caught 9 November 1890 at Peize, province Drenthe. The specimen was in the possession of a bird-seller at Rotterdam and has been sold, some years ago, to a collection in England.

319. *Carpodacus erythrina* (Pallas). [ROODMUSCH].

We have one specimen, a young male, caught in the autumn of 1864 near Groningen. The bird lived till 26 April 1865 in confinement and was presented to the Museum by Dr. C. de Gavere.

320. *Pyrrhula pyrrhula* (L.). [GROOTE GOUDVINK].

3 specimens.

321. *Pyrrhula pyrrhula europaea* (Vieillot). [GOUDVINK].

5 specimens.

322. *Chloris chloris* (L.). [GROENLING].

3 specimens. Mr. W. J. Heyligers presented in 1899 to the collection a pale brownish male, caught in the Netherlands, place and date not known.

323. *Coccothraustes coccothraustes* (L.). [APPELVINK].

We received 4 specimens, caught October 1904, and October and November 1906 on Texel. We have only one fledgling from our country, a female, shot 22 June 1859 at Vogelenzang, Noord-Holland.

324. *Emberiza citrinella* L. [GEEGORS].

11 specimens. The brown pectoral band is not always present in birds from our country; a brown malar-stripe is sometimes indicated.

325. *Emberiza leucocephalos* S. G. Gmelin. [WITKOPGORS].

We possess a male, that has lived in and is purchased from the Zoological Garden at Rotterdam and that has been caught 2 May 1873 near Utrecht. The bird shows some traces of albinism at the base of the tail, evidently in consequence of the confinement.

326. *Emberiza cirlus* L. [CIRLGORS].

No specimen in the collection. Has been caught three or four times in the Netherlands.

327. *Emberiza cia* L. [GRIJZE GORS].

No specimen in the collection. Has been caught twice in the province Gelderland.

328. *Emberiza hortulana* L. [ORTOLAAN].

We received only one specimen, a male, caught in autumn 1906 near Doornspijk, Gelderland. We possess altogether 14 specimens from our country, adults and young ones killed in spring, from Groningen, Gelderland and Valkenswaard, and two killed in autumn at Overveen, Noord-Holland and in Noord-Brabant.

329. *Emberiza rustica* Pallas. [BOSCHGORS].

No specimen killed in the Netherlands in our collection. The species has been observed only once, in Gelderland.

330. *Emberiza aureola* Pallas. [WILGENGORS].

Once observed in Gelderland. No specimen in the collection.

331. *Emberiza pusilla* Pallas. [DWERGGORS].

We possess the following specimens from the Netherlands:
 ♀, 18 November 1842, near Leiden;
 —, September 1858, near Rotterdam;
 ♂, 16 October 1874, Vogelenzang (Coll. van Wickevoort Crommelin, 113—1);
 —, 21 October 1901, province Utrecht.

332. *Emberiza schoeniclus* L. [RIETGORS].

9 specimens.

333. *Emberiza calandra* L. [GRAUWE GORS].

2 specimens ¹⁾.

334. *Passerina nivalis* (L.). [SNEEUWGORS].

15 specimens.

335. *Calcarius lapponica* (L.). [IJSGORS].

We received one specimen, a male, shot 3 January 1907 at Westernieland, Groningen. We possess further 8 stuffed specimens from the Netherlands.

1) According to le Roi (Ornith. Monatsber. 1908, p. 109) two specimens of *Emberiza rutila* Pallas have been caught in the beginning of April 1906 near Bocholtz, province Limburg. As in 1905 a large number of these buntings has been imported, it is very likely, that they were examples escaped from captivity.

Leyden Museum, September 1908.

EXPLANATION OF PLATES.

Plate 7. Hybrid between *Fuligula fuligula* (L.) × *Aythya nyroca* (Güldenstädt).
Female, shot 8 September 1905 at Nieuwkoop. Seen from below and
from the side.

Plate 8. *Strix flammea* L. Specimens with pure white undersurface.
a, ♂, shot 19 October 1869 at Vogelenzang (Coll. van Wickevoort
Crommelin, 27—8).
b, ♂, shot 11 December 1885 at Hillegom (Coll. van Wickevoort
Crommelin, 27—16).

NOTE XIX.

ON THE SUPPOSED IDENTITY OF
NEREIS (NEANTHES) SUCCINEA LEUCK.
AND N. PERRIERI ST. JOS.

BY

Dr. R. Horst.

Examining a collection of Annelida from the Zuiderzee I met with several individuals of a *Nereis*-species, that I think can only be *N. succinea* Leuck. Yet this worm is a somewhat mysterious species, first described by Leuckart in his „Verzeichniss der zur Fauna Helgoland's gehörenden wirbellosen Seethiere”¹⁾ and, though this author stated that it was very common at Cuxhaven, it appears afterwards only to have been collected again near Norderney by Dr. Metzger²⁾. At least in Michaelsen's „Polychaetenfauna der deutschen Meere”³⁾ it is not mentioned in the „Tabelle der untersuchten Polychaeten” and the only locality, quoted by him, is Helgoland. The detailed description of *N. succinea*, published by Ehlers in his *Borstenwürmer*⁴⁾, was based on Leuckart's original specimens and those of Dr. Metzger. I was therefore very glad that Prof. Ehlers would give me the opportunity to examine one of the specimens of his Museum and I am very much obliged to him for this

1) Frey und Leuckart, Beiträge zur Kenntniss Wirbelloser Thiere, 1847, p. 154, pl. II, figs. 9 and 11.

2) Ehlers, die Borstenwürmer, p. 572.

3) Wissensch. Meeresunters. der Commission zur wiss. Unters. der deutschen Meere, Neue Folge, Bd. II, 1897.

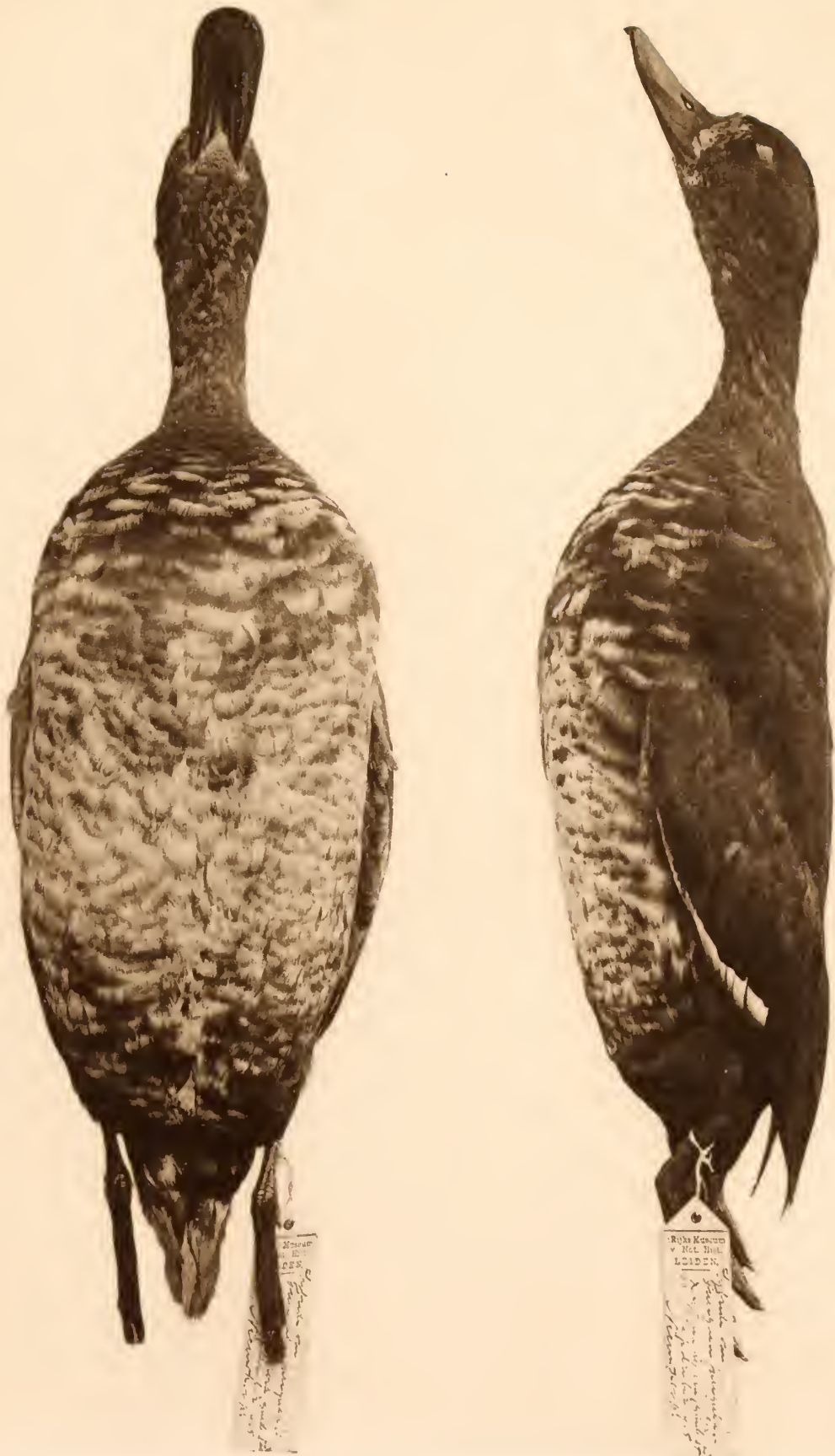
4) loc. cit. p. 570, pl. XXII, figs. 18—22.

kindness. For, my specimens in some regards (length of the tentacular-cirri and shape of the posterior parapodia) deviate from the description given by Ehlers, and moreover I was struck by the great resemblance of the Zuiderzee-worms with the *Nereis Perrieri* St. Jos. from the Coast of France ¹). *Nereis succinea* as well as *N. Perrieri* is characterized by the leaf-like development of the dorsal ligule with the parapodia of the posterior segments and the close affinity of both species was already recognized by de Saint-Joseph himself ²); however *N. succinea* differs from the last-named species by having shorter tentacular cirri, more teeth at the mandibles and a smaller number of segments. The Norderney-specimen of *Nereis succinea* from the Göttinger Museum, that shows an indifferent state of preservation, is a rather stout worm, measuring 80 mm. in length, 6 mm. in its greatest breadth (with parapodia) and has only 68 segments. The length, stated by Leuckart for this species, is 100 to 150 mm., but unfortunately he does not mention the number of the segments. All the specimens from the Zuiderzee are much smaller, the largest of them measuring hardly 50 mm. in length and 5½ mm. in breadth; however the number of their segments amounts to about 100. Taking this in account and also the well-known fact, that among the individuals of an Annelid there often reigns a great disagreement in the number of segments, I believe that the small number of segments of the Norderney-worm has to be considered as an exception. A character of more importance to distinguish *N. succinea* from *N. Perrieri* appears to be the different length of the tentacular cirri, for in the Norderney-specimen these cirri, reversed, do not extend farther backward than to the 4th segment, as already stated by Ehlers.

In *N. Perrieri* however the longest tentacular cirri extend till the 7th setigerous segment, therefore four segments more backward. Now our Zuiderzee-specimens show great diffe-

1) Ann. d. Scienc. natur. Zoologie, 8e Sér. t. V, 1898, p. 288, pl. XV, figs. 69—77.

2) loc. cit. p. 292.



J. C. WAKEFIELD phot

ROELOFFZEN-HURNEK FN VAN SANTEN impf

Hybrid between *FULIGULA FULIGULA* (L.) \times *AYTHIA NYROCA* (Güldenstädt), ♀.



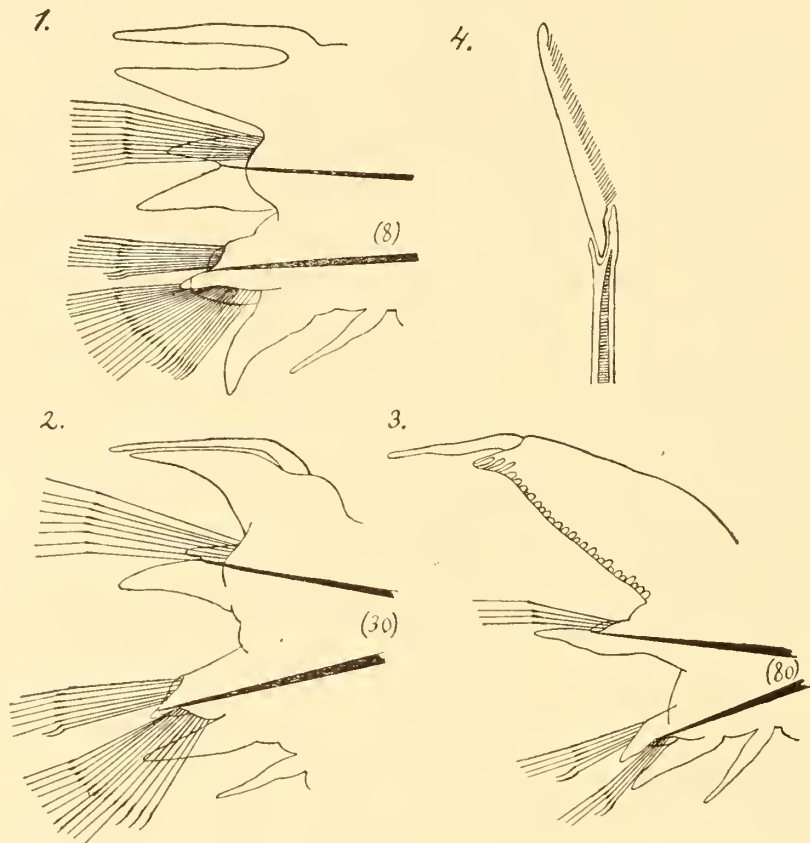
J. C. WAKERLIN phot.

b. *a*
STRIX FLAMMEA L.
Specimens with pure white undersurface,
killed in Holland.

rences in that respect, for in some of them the longest tentacular cirri reach the 8th, even the 9th segment, whereas in others, from the same locality, they do not extend farther backwards than to the 5th segment or the anterior border of the 6th one. Therefore, in my opinion, there cannot be assigned a great systematical value to this character. Lastly only remains the different number of teeth in the maxillae of both species, for in *N. Perrieri* there are only 4 to 5 of them, whereas the jaws of *N. succinea* possess 8 to 9 teeth. Though the maxillae of the Norderney-specimen have the teeth not very distinctly separated, and hardly 6 or 7 of them can be recognized, all our Zuiderzee-worms show a great number (8 to 9) of distinct teeth. The question therefore remains, whether in all specimens of *N. Perrieri* the teeth of the jaws are so less developed, as described by de Saint-Joseph. On the contrary I observed a remarkable agreement in the arrangement of the paragnathi of the proboscis of both species; for in *N. Perrieri*, as stated by de Saint-Joseph, both lateral groups upon the dorsal side of the basal region of the proboscis (VI) consist of a circle of 6 to 7 small paragnathi around a large central one. Now this character is also very distinct in the Norderney-specimen and is also visible in most of the Zuiderzee-worms. Upon the dorsal median area (V) there are usually two paragnathi, obliquely placed next to each other. As for the paragnathi of the maxillary region in the Norderney-specimen, group I contains 3 of them, placed behind each other, quite like in *N. Perrieri*; however in some of our Zuiderzee-specimens this number amounts to 6.

With regard to the shape of the superior ligule in the parapodia of the posterior segments, perhaps it could be concluded from the figures of Ehlers (pl. XXII, fig. 21), that with *N. succinea* this lobe is more developed in a horizontal direction and that the dorsal cirrus is hardly extending beyond the tip of the ligule. However I believe, that the imperfectness of this figure must be ascribed to the rather indifferent state of preservation of the worm;

for, as already stated by Leuckart, it could also be observed in the Norderney-specimen, that in the posterior segments of the body the dorsal cirrus is more and more reaching the tip of the ligule and finally projects a good deal beyond it. Along the inferior border of the elongated ligule I observed always a series of dark coloured glands.



Figs. 1—3. Parapodia of *Nereis succinea*, from the left side, in posterior view. The numbers in brackets indicate the serial number of each parapodium.

Fig. 4. A falcate bristle of the same, highly enlarged.

Comparing the figures of parapodia, taken from a Zuiderzee-specimen of *N. succinea* with those from *N. Perrieri*, published by de Saint-Joseph, one will not hesitate about the identity of both species. Consequently the conclusion that one of our northern Annelids should have such an unusually limited geographical distribution, as hitherto is ascribed to *Nereis succinea*, can no longer be maintained.

Leyden Museum, November 1908.

NOTE XX.

ON A BHAWANIA-SPECIMEN, A CONTRIBUTION TO
OUR KNOWLEDGE OF THE CHRYSOPETALIDAE

BY

Dr. R. HORST.

(With plate 9).

Amidst sponges, recently collected by my friend Mr. P. J. Buitendijk in the bay of Batavia, I met with a Polychaete-worm, obviously belonging to the genus *Bhawania* of Schmarda ¹⁾. Though I cannot give full information about its structure, because I had only a single specimen at my disposal with its head so far withdrawn that it was quite invisible, nevertheless I think the present communication not without interest, since Schmarda's description is rather incomplete and there still reigns a good deal of uncertainty about the affinity of the paleae-bearing Polychaetae.

It is a slender, flattened worm, measuring 25 mm. in length and 1½ mm. in breadth; the body is only slightly tapering at its anal extremity and has about 175 segments. Its colour is yellowish gray with a somewhat paler dorsal border and a median row of black spots at the ventral side; moreover there is a couple of black patches at the base of each foot, forming along the sides of the body a narrow dark band. The dorsum is entirely covered by the paleae (fig. 1), which are arranged in slightly bent transverse rows, with the concavity directed forward; this concavity increases towards the head and on the anterior segments

1) Neue Wirbellose-Thiere, Bd. I, 2, 1861, p. 164, pl. 37, figs. 323—325.

the rows nearly have the shape of a circle. Each row consists of a left and a right half, each containing in the middle of the body 20 paleae; the median ones of both sides are partly stretching over each other in the middle of the back. The paleae differ somewhat in size in different regions of the body, and in the same row the lateral ones are the longest and extend a little beyond the others. As rightly stated by Ehlers ¹⁾ these paleae show a great resemblance with the scales of the butterfly-wing; they consist (figs. 2 and 3) of a shaft, entirely hidden in the dorsum, and a broad distal division. The shaft, measuring about a third of the total length of the bristle, is faintly knee-like bent and becomes somewhat broader in its upper beneath the cuticula lying portion.

The distal portion of the bristle has an elongated spoon-like shape, with an arched surface, its convex side being turned upward; its margin is plain, except at its median side, that is bluntly serrated. Both sides of the palea do not have the same structure. Its convex side (fig. 2) shows three strong, longitudinal ridges, one in the middle and one on both lateral area's; the spaces between these ridges are densely beset with small round tubercles, that assume a more transverse shape towards the distal end of the bristle. The concave side of the palea (fig. 3) possesses 14 to 15 delicate, longitudinal veins, the median ones of which are prolongating into the shaft; the area's between these veins show a fine transverse striation, like as observed in the shaft of most compound bristles. The paleae have a yellowish hue (by transmitted light) except at the tip, which is colourless; in some of them I observed moreover 6 to 7 pale narrow, transverse bands, dividing the total surface in as much transverse fields. The distal portion of a palea measures about 0.25 mm. in length and 0.08 mm. in breadth.

The paleae of *Bhawania* are much agreeing with those

1) Die Borstenwürmer, p. 84.

of *Chrysopetalum* ¹⁾, however in these worms the total margin of the bristle is serrated and there occur only 5 longitudinal ridges on its dilated portion. The paleae of *Paleanotus* ²⁾ too, as far as can be concluded from Schmarda's incomplete figures, have a similar appearance; on the contrary the long paleae («spinose dorsal bristles" Mc. Intosh) of *Palmyra* ³⁾ differ considerably and have a quite other feature.

Outward from the row of paleae and separated from it by the dorsal cirrus, the notopodium bears a fascicle of elongated, spatulate bristles with a pointed tip and a short shaft (fig. 4); they show the same fine transverse striation as the underside of the paleae, but it is usually masked by foreign matters adhering to them. A yellow, faintly bent acicula occurs at the base of this fascicle. *Chrysopetalum* appears to lack this dorsal fascicle; however in *Paleanotus* it is probably present (Schmarda, loc. cit. p. 163).

The neuropodium contains a fascicle of compound bristles, much resembling those of *Nereis* (fig. 5). The stalk has at its distal extremity a forked cup, much higher at one side than at the other, in which a falcate appendix is articulated, that ordinarily is provided with hairs along its concave border; in some of them this terminal piece is twice as long as in others. Moreover in the dorsal portion of the ventral fascicle there occurs a couple of setose bristles (fig. 6), the distal region of which is also furnished with fine hairs along its margin. This fascicle is likewise supported by a yellow acicula. In *Chrysopetalum* as well as in *Paleanotus* the ventral fascicle contains also compound bristles; *Palmyra* on the contrary has simple, forked ventral bristles.

All segments of *Bhawania* are provided with a dorsal cirrus, situated outward from the row of paleae and almost as long as these; it consists of a cylindrical basal

1) Ehlers, loc. cit. pl. II, fig. 5.

2) Schmarda, loc. cit. p. 163, fig. e and pl. 37, fig. 329.

3) Mc. Intosh, Challenger Annelida, pl. VIA, fig. 8.

segment and a tapering distal part, nearly of the same length. This terminal portion is provided on its surface with small tubercles and shows in its basal region several strongly refringent glands. The ventral cirrus likewise is articulated, but it has a short conical basal segment; its distal part is dilated at the base and contains also numerous glands. A pair of slender anal cirri are present, extending somewhat beyond the posterior segment.

Whether our Batavia-worm is specifically distinct from the *Bhawania myrialepis* of Schmarda, from Ceylon, is not easy to decide. The dimensions of the last-named species are much greater, its length being 63 mm. and its breadth 4 mm., whereas the number of segments amounts to 220; the paleae are of a gold-colour mixed with red, and the belly is reddish brown. Regarding the head Schmarda states: it is small, provided with five antennae of the same length and wants the eyes; but I have some doubt, that his description as well as his figure is not exact, perhaps because he could not clearly distinguish it, like as in our specimen. On the contrary the cephalic lobe of *Paleanotus* agrees with that of *Chrysopetalum* in the presence of 3 antennae and 2 pairs of eyes.

For a longtime there reigned a good deal of uncertainty about the real characters and the systematical position of *Palmyra*, because, as rightly stated by Racovitza¹⁾, the descriptions of the different authors were very divergent and discrepant. By the investigations of Grube²⁾ and Mc. Intosh we now have a better knowledge of the structure of *Palmyra aurifera* and it is proved by these authors that *Palmyra* is distinguished from *Chrysopetalum* and *Paleanotus* (and *Bhawania*?) not only by another structure of the head (stalked eyes, a single unpaired antenna) and by the parapodia having simple ventral bristles, but also by

1) Le lobe céphalique et l'Encéphale des Annél. Polychètes: Archiv. Zool. expériment. 3e Sér. t. IV, 1896, p. 209.

2) Annulata Semperiana: Mém. Acad. Imp. d. Sc. St. Pétersbourg, Sér. 7, t. XXV, p. 13.

the presence of scales¹). Mc.Intosh has been the first, who demonstrated that *Palmyra* possesses smooth, diaphanous scales, that were overlooked by Savigny, by Audouin and Milne Edwards and by Grube. Considering that *Palmyra* moreover agrees with *Pontogenia* in the appendages of the head (stalked eyes; unpaired antenna), in the shape of the ventral bristles and of the cirri with their slender terminal part, then in my opinion there can no more remain any doubt, that *Palmyra* belongs to the Aphroditidae, as supposed by Savigny, and cannot be united with *Chrysopetalum*, *Paleanotus* and *Bhawania* in the same family. Therefore the family of the Palmyridae cannot longer be maintained and, as already suggested by Ehlers, it is desirable to use instead of that the name of Chrysopetalidae.

This family may then be characterized as follows:

Body short or elongated, with few or numerous segments, all bearing on their dorsal side a fan or a transverse row of paleae. Cephalic lobe provided with tentacles and eyes²). Buccal segment with two or four tentacular cirri on each side. Parapodia uniramous or biramous, with dorsal cirri upon all segments. Compound ventral bristles.

A. Body short, with few segments. Parapodia uniramous.

α. Buccal segment with 4 tentacular cirri on each side. Paleae arranged in a fan.

CHRYSOPETALUM Ehlers.

Chrys. debile (Gr.)³).

(*Palmyra debilis* Gr.; *Chrys. fragile* Ehl.; *Palm. portus-veneris* Clap.; *Palm. Evelinae* Clap.; *Chrys. coecum* Langh.).

Mediterr. (Nice, Porte-Vendres); Adriat. (Quarnero); Madeira.

1) About the distribution of the dorsal cirri there still reigns some uncertainty; whereas Grube says that they appear alternately as with the Aphroditidae, according to Mc.Intosh „they occur both on feet provided with scales and on those without them.”

2) I suppose that the palps in *Paleanotus* have been overlooked by Schmarda.

3) For the details of the literature see Ehlers and Racovitza loc. cit.

b. Buccal segment with 2 tentacular cirri on each side. Paleae in a transverse row.

PALEANOTUS Schmarda.

Pal. chrysolepis Schm. Cape of Good Hope.

B. Body elongated, with numerous segments. Parapodia biramous. Paleae in a transverse row.

BHAWANIA Schmarda.

Bhaw. myrialepis Schm. Ceylon, Trincomali.

Bhaw. sp. Bay of Batavia.

Perhaps the genus *Dysponetus* of Levinsen (Vidensk. Meddel. f. d. naturh. Forening i Kjøbenhavn, 1879), as suggested by Racovitza, is nearly allied to this family.

Leyden Museum, 21 January 1909.

EXPLANATION OF THE PLATE.

- Fig. 1. A parapodium of the middle of the body. $\times 110$ diam.
 " 2. A palea seen from the upperside. $\times 330$ diam.
 " 3. An other palea seen from the underside. $\times 230$ diam.
 " 4. A spatulate dorsal bristle. $\times 330$ diam.
 " 5. A ventral falcate bristle. $\times 330$ diam.
 " 6. A ventral setose bristle. $\times 600$ diam.
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NOTE XXI.

ON NEW-GUINEA BIRDS. — II *).

BY

Dr. E. D. VAN OORT.

In the following lines I enumerate some birds of New Guinea, which our Museum received in the course of the year 1908. Mr. C. L. J. Palmer van den Broek and Mr. P. J. van Cloven presented to the Museum two small collections of birds, unfortunately mostly unlabelled, which are said to have been collected respectively near Fak-Fak and near Kaukas, western New Guinea, south of the Mac Cluer Gulf. As there are among the skins from Fak-Fak three unlabelled specimens of *Schlegelia wilsoni* and among those from Kaukas one *Geoffroyus personatus rhodops* and two *Myristicivora melanura*, also unlabelled, it is quite sure, that not all the specimens are from the given localities. Of course I mention only those birds, which are provided with a label, but in some cases, regarding rare species, I mention also unlabelled specimens.

From Mr. J. Henkelman we purchased a collection of birds, that are collected on the Owen Stanley Mountains, eastern New Guinea, shot above 3000 feet, some specimens on Mount Victoria at 12000 feet of altitude. Several species are important acquisitions to our collection. Three forms are described as new subspecies.

ARDEIDAE.

Herodias alba timoriensis (Lesson).*Ardea egretta*, Schlegel, Cat. Ardeae, 1863, p. 17 (partim).

*) For part I, see Notes Leyden Museum XXIX, 1907—'08, p. 170.

Herodias torra, Salvadori, Orn. Pap. III, 1882, p. 350.

Herodias timoriensis, Sharpe, Cat. B. Br. M. XXVI, 1898, pp. 98 and 270.

One specimen, not in breeding dress. Kaukas. Coll. van Cloven. — The bill in this example is yellowish with a dark brownish tip to the upper mandible. The bill in *timoriensis* seems to turn never quite black.

FALCONIDAE.

Leucospiza novae-hollandiae leucosomus Sharpe.

Astur novae hollandiae, subsp. α . *Astur leucosomus* Sharpe, Cat. B. Br. M. I, 1874, p. 119.

Leucospizias leucosomus, Salvadori, Orn. Pap. I, 1880, p. 42.

An adult specimen. Fak-Fak. Coll. Palmer van den Broek. — We have no specimens from New Guinea in a brownish grey plumage, like that is found in specimens of *Leucospiza novae hollandiae* (Gmelin) from Australia, only 4 pure white examples from western New Guinea (Lobo Bay, Has and Island of Mefoor). Our traveller von Rosenberg, who collected 12 February 1869 a male on Mefoor, described the bill black, cere, iris and feet orange-yellow.

Falco severus religiosus Sharpe.

Falco religiosus Sharpe, Cat. B. Br. M. I, 1874, p. 397 (partim, only the immature female).

Falco severus papuanus Meyer & Wiglesworth, Abh. Mus. Dresden, 1892—93, n^o. 3, p. 6.

Two immature specimens, apparently a male and a female. Mt. Victoria. Coll. Henkelman. — In 1874 Sharpe described under the name of *Falco religiosus* two falcons, which make part of our collection. The bird he first described, the immature female (collected by Bernstein at Weda, southern Halmahera, 14 June 1863 — Schlegel, Cat. Accipitres,

Notes from the Leyden Museum, Vol. XXX.

Falco severus, n^o. 9), belonged indeed to a new form, an eastern representative of *Falco severus* Horsfield. The other bird however, that, which Sharpe called the adult female (being a male, collected by Dr. E. A. Forsten in 1842 on Ceram), belongs to quite another species, is namely a melanistic *Falco lunulatus* Latham (*Falco lunulatus*, Schlegel, Cat. n^o. 7). The two birds from Mount Victoria agree with Sharpe's typical specimen from Halmahera, only the black longitudinal stripes on the undersurface are a little broader; this may be however a difference of age.

The lighter, western true *Falco severus* Horsfield (syn. *Falco aldrovandii* Temminck, *F. rufipedoides* Hodgson, *F. severus indicus* Meyer & Wigglesworth) is found from British India to the western Indo-Malayan Archipelago, whereas the darker, eastern race, *Falco severus religiosus* Sharpe, inhabits the Moluccas, New Guinea and the adjacent islands. Intermediate forms we have in our collection from the Philippine Islands (*Falco guttatus* G. R. Gray) and from Celebes.

RALLIDAE.

Rallicula forbesi Sharpe.

Rallicula forbesi Sharpe, Cat. B. Br. M. XXIII, 1894, p. 124.

A male and a female. Mt. Victoria, 12000 ft. Coll. Henkelman. — This species was still wanting in our collection. We possess now the three known species of this genus. Of *Rallicula rubra* Schlegel (Ned. Tijdschr. Dierk. IV (1871), p. 55) we have the two type-specimens, a male and a female, collected by von Rosenberg 13 April 1870 near Hattam, and an adult specimen from Mt. Arfak presented in 1875 by Mr. van Hasselt. Of *Rallicula leucospila* Salvadori (Ann. Mus. Civ. Genova, VII, 1875, p. 975) we have only one specimen, a male, shot 27 January 1876 at War-mendi, Arfak district, purchased from A. A. Bruyn in 1878.

COLUMBIDAE.

Carpophaga pinon rubiensis A. B. Meyer.

Carpophaga rubiensis, Salvadori, Cat. B. Br. M. XXI, 1893, p. 223.

Carpophaga pinon rubiensis, Rothschild & Hartert, Nov. Zool. VIII, 1901, p. 114.

One specimen. Kaukas. Coll. van Cloven. — This specimen has the upper and under wingcoverts distinctly edged with greyish. The distribution of *rubiensis* is not clear to me; possibly it may not have a subspecific rank. The type-specimen of *Columba pinon* Quoy & Gaimard was shot on Rawak, a small island north of Waigeoe. In the description the authors say nothing as to greyish edgings to the wingcoverts, but on the plate the wingcoverts have less distinct edgings (*Voyage autour du monde, Zoologie*, 1824, p. 118, pl. 28). We have no specimen from Rawak, but four specimens from Waigeoe, which have no distinct edgings to the upper wingcoverts. From Salawatti we have two specimens, one of them having a faint indication of edgings to the upper and also to the under wingcoverts. Among seven specimens from the Aroe Islands two have also the upper wingcoverts faintly edged with greyish. Three specimens from northwestern New Guinea (Amberbaki, Dorei, Andai) have upper and under wingcoverts very faintly edged with grey; the same is the case in two specimens from Sorong, one from Skroe and two from the Triton Bay. Nine specimens collected by Mr. H. A. Lorentz along the Noord River, southern New Guinea, are without light edgings to the wingcoverts, while two specimens collected by Dr. J. W. R. Koch at the Etna Bay are true *rubiensis*, having very distinct light greyish edgings to upper and under wingcoverts. According to Rothschild and Hartert both *pinon* and *rubiensis* occur also in eastern New Guinea.

CUCULIDAE.

Caliechthrus leucolophus (S. Müller).

Caliechthrus leucolophus, Salvadori, Orn. Pap. I, 1880, p. 358.

Calliechthrus leucolophus, Shelley, Cat. B. Br. M. XIX, 1891, p. 225.

A male. Kaukas, 25 April 1907. Coll. van Cloven.

PSITTACIDAE.

Charmosyna stellae A. B. Meyer.

Charmosyna stellae A. B. Meyer, Zeitschr. f. ges. Orn. III, 1886, p. 9, pl. II. — Salvadori, Cat. B. Br. M. XX, 1891, p. 83.

A male and two females. Owen Stanley Mountains. Coll. Henkelman.

Cyclopsitta desmarestii intermedia, nov. subspec.

One male. Evidently from Fak-Fak. Coll. Palmer van den Broek.

One specimen. Kaukas. Coll. van Cloven.

I separate here the form, which occurs on the mainland of New Guinea, south of the MacCluer Gulf under the name of *intermedia*. The type-specimens are three birds, collected by Mr. K. Schädler at Skroe, west-coast of New Guinea, south of the MacCluer Gulf, viz.: a male and a female (?) shot 17 January 1897 and a female (?) shot 26 February 1897. This subspecies differs from *Cyclopsitta desmarestii* Garnot, from Dorei, by the brighter vermilion-orange pileum and hindneck, by the smaller occipital blue spot, which is sometimes absent, by the smaller and paler, rather greenish blue suborbital spot, which spot is larger than that in *occidentalis* and more pure blue. The cheeks are green with orange tips to only a few feathers, the earcoverts are green, not golden yellow as in *occidentalis*, all the feathers with orange extremities.

The young bird (Skroe, 26 February 1897) has the cheeks green with yellow shaftstripes, much resembling *desmarestii*, but the subocular spot is smaller and more greenish blue and the blue occipital spot is wanting.

Of *Cyclopsitta desmarestii* and subspecies we possess the following specimens:

a. *Cyclopsitta desmarestii* (Garnot).

9 specimens from Dorei and from Arfak (collected by Wallace, Hoedt, von Rosenberg and Woelders).

b. *Cyclopsitta desmarestii intermedia* Oort.

7 specimens from Lobo Bay (S. Müller coll.), Skroe (K. Schädler coll.), Kaukas (and Fak-Fak).

c. *Cyclopsitta desmarestii occidentalis* (Salvadori).

5 specimens, 2 from Sorong and 3 from Salawatti, collected by Dr. Bernstein. The specimens from Salawatti are much brighter coloured on cheeks and earcoverts than those from Sorong. More material probably will show that specimens from these two localities are constantly differing.

d. *Cyclopsitta desmarestii blythi* Wallace.

4 specimens from Misool, collected by Wallace, Bernelot Moens and Hoedt, and one specimen without locality presented by van Musschenbroek. The two specimens collected by Hoedt are young birds; they have large bluish green subocular spots. The bird presented by Bernelot Moens, an old specimen, has under each eye a light green feather. In the specimen collected by Wallace the subocular spot is quite wanting.

Psittacella brehmi pallida A. B. Meyer.

Psittacella pallida A. B. Meyer, Zeitschr. f. ges. Orn. III, 1886, p. 3.

Psittacella brehmi, Salvadori, Cat. B. Br. M. XX, 1891, p. 499 (partim).

Psittacella brehmi pallida, Hartert, Ibis, 1897, p. 58.

Three females. Owen Stanley Mountains. Coll. Henkelman. — In these specimens only chin, throat and lower cheeks are more greyish than in the typical *brehmi* from western New Guinea; the head has the same coloration.

Psittacella madaraszi A. B. Meyer.

Psittacella madaraszi A. B. Meyer, Zeitschr. f. ges. Orn. III, 1886, p. 4, pl. I, f. 1. — Salvadori, Cat. B. Br. M. XX, 1891, p. 500. — Hartert, Ibis, 1897, p. 58. — Rothschild & Hartert, Nov. Zool. VIII, 1901, p. 87.

One specimen, apparently a female. Owen Stanley Mountains. Coll. Henkelman. — The forehead is blue; crown green; nape and hindneck green with black and orange cross-bars; back, wingcoverts and tail green; quills black with green outerwebs; rump green with yellow and black bars; underparts dull green, clearer on vent; under tailcoverts red. Wing 86 mm.

The male of *Psittacella madaraszi* is much like the male of *Psittacella modesta* Schlegel (Ned. Tijdschr. Dierk. IV (1871), p. 36), so that the first seems to be a subspecies of the latter; the females however differ so considerably, that we must consider them as two species.

Chalcopsitta ater insignis Oustalet.

Chalcopsittacus insignis, Salvadori, Cat. B. Br. M. XX, 1891, p. 15.

Two adult specimens. Evidently from Fak-Fak. Coll. Palmer van den Broek.

Two adult specimens. Evidently from Kaukas. Coll. van Cloven. — *Chalcopsitta insignis* Oustalet is only a bright coloured subspecies of *Chalcopsitta ater* (Scopoli). It is nearly allied to *ater bernsteini* von Rosenberg, but all the red in the plumage is much more pronounced and the feathers of the neck and of the breast have red bases. Rump-feathers and upper tailcoverts are brighter blue than in *bernsteini* and the ends of the breastfeathers are dark purplish blue. Under wingcoverts, innerwebs of quills and tibiae are red. The type-specimen of *insignis* is said to come from Amberpon Island, off the westcoast of the Geelvink Bay. I have little doubt, that our specimens are from the mainland of New Guinea, south of the MacCluer Gulf. (Iris yellow with grey; van Cloven.)

Dasyptilus pecquetii (Lesson).

Dasyptilus pesqueti, Salvadori, Cat. B. Br. M. XX, 1891, p. 385.

One specimen. Evidently from Fak-Fak. Coll. Palmer van den Broek.

Lorius lory erythrothorax Salvadori.

Lorius erythrothorax Salvadori, Cat. B. Br. M. XX, 1891, p. 35.

One male and two unsexed specimens. Evidently from Fak-Fak. Coll. Palmer van den Broek.

A female. Kaukas, 25 April 1907. Coll. van Cloven.

A young specimen. Kaukas. Coll. van Cloven.

PODARGIDAE.

Podargus papuensis Quoy & Gaimard.

Podargus papuensis, Hartert, Tierr. Pod. 1897, p. 2.

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An adult female and a young male in down. Fak-Fak.
Coll. Palmer van den Broek.

An adult specimen. Kaukas. Coll. van Cloven.

CAPRIMULGIDAE.

Caprimulgus macrourus Horsfield.

Caprimulgus macrurus, Hartert, Tierr. Caprim. 1897, p. 53.

One specimen. Kaukas. Coll. van Cloven.

CORACIIDAE.

Eurystomus orientalis australis Swainson.

Eurystomus pacificus, Salvadori, Orn. Pap. I, 1880, p. 503.

„ *australis*, Sharpe, Cat. B. Br. M. XVII, 1892, p. 36.

Two females and one unsexed specimen. Evidently from
Fak-Fak. Coll. Palmer van den Broek.

A male. Kaukas, 29 April 1907. Coll. van Cloven.

Eurystomus crassirostris Sclater.

Eurystomus crassirostris, Salvadori, Orn. Pap. I, 1880,
p. 510. — Sharpe, Cat. B. Br. M. XVII, 1892, p. 36.

One specimen. Fak-Fak. Coll. Palmer van den Broek.

One specimen. Kaukas. Coll. van Cloven.

PITTIDAE.

Pitta novae-guineae Müller & Schlegel.

Pitta novae guineae, Salvadori, Orn. Pap. II, 1881,
p. 380. — Sclater, Cat. B. Br. M. XIV, 1888, p. 440.

Pitta atricapilla atricapilla, Rothschild & Hartert, Nov.
Zool. VIII, 1901, p. 62.

A female fledgling. Kaukas, 25 April 1907. Coll. van

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Cloven. — Head, earcoverts and hindneck blackish, forehead with brown spots. Chin and throat dull brownish white, breast brownish olive with lighter shaftstripes; vent and under tailcoverts sandy brown with rosy tinge. Back, wingcoverts and tail dull green, quills blackish. Eye black, bill darkbrown with light tip, feet greyish brown.

I think it better to use for this species the name *novae-guineae* instead of *atricapilla*, as the latter name can give much confusion.

Pitta macklotii Temminck.

Pitta mackloti, Salvadori, Orn. Pap. II, 1881, p. 395. —
Sclater, Cat. B. Br. M. XIV, 1888, p. 436.

One adult specimen. Owen Stanley Mountains. Coll. Henkelman. — This specimen is indistinguishable from examples from western New Guinea.

MENURIDAE.

Orthonyx temminckii victoriana, nov. subsp.

A male and a female. Mt. Victoria, 12000 ft. Coll. Henkelman.

♂. Similar to *Orthonyx temminckii* Vigors & Horsfield, but much more strongly mottled with black on the head and on the mantle; rump and upper tailcoverts olive-brownish, not ferruginous as in *temminckii*, the feathers being margined with black; tailfeathers black with brownish margins; forehead black with grey centres to the feathers; earcoverts dark grey; chin black; throat and foreneck white, the feathers minutely margined with black; sides of breast dark grey, the feathers with black bases; on each side of the white foreneck a black patch; centre of breast white, the feathers with black bases and narrow black margins; abdomen ashy grey, under tailcoverts brown; flanks olive brown; wingcoverts black, the lesser ones with

grey, the larger ones with olive-brown extremities; quills black without white spots and with brownish margins to the outer webs.

Wing 91, tail 83, culmen 12.5, tarso-met. 34 mm.

♀. Like the male, but feathers of the mantle with distinct light shaftstripes; chin, throat and foreneck pale ferruginous, not orange-rufous as in *temminckii*; no black spots on the sides of the foreneck.

Wing 87, tail 73, culmen 12.5, tarso-met. 33 mm.

This subspecies is nearly allied to *Orthonyx temminckii novae-guineae* A. B. Meyer, from which it differs by the less pure white of the undersurface, which has a more mottled aspect; by the more brownish olive rump, which is in *novae-guineae* more rufous like in *temminckii*, and by the pale coloration of the throat and the foreneck in the female, which is in the female of *novae-guineae* orange-rufous. In the latter form the rufous on the foreneck is also less extended.

MUSCICAPIDAE.

Poecilodryas papuana (A. B. Meyer).

Poecilodryas papuana, Sharpe, Cat. B. Br. M. IV, 1879, p. 247. — Salvadori, Orn. Pap. II, 1881, p. 91.

Microeca papuana, Rothschild & Hartert, Nov. Zool. X, 1903, p. 470.

One adult specimen. Owen Stanley Mountains. Coll. Henkelman.

Machaerirhynchus nigripectus harterti, nov. subsp.

Two adult males and one immature male. Owen Stanley Mountains. Coll. Henkelman.

This subspecies differs from *Machaerirhynchus nigripectus* (Schlegel) by the brighter yellow of the undersurface, which is more orange-yellow, especially on chin, throat, sides of face and superciliary stripe. The immature male,

compared with the type-specimen of *nigripectus* (*Macheirhynchus nigripectus* Schlegel, Ned. Tijdschr. Dierk. IV (1871), p. 43), which is an immature bird of the same age, is also brighter yellow. Rothschild and Hartert have observed also a difference in birds from western and from eastern New Guinea, preserved in the Tring Museum (Nov. Zool. X, 1903, p. 476).

Peltops blainvillii (Lesson & Garnot).

Peltops blainvillii, Sharpe, Cat. B. Br. M. IV, 1879, p. 433.

„ *blainvillei*, Salvadori, Orn. Pap. II, 1881, p. 8.

Two adult specimens. Owen Stanley Mountains. Coll. Henkelman.

CAMPEPHAGIDAE.

Graucalus boyeri (G. R. Gray).

Graucalus boyeri, Sharpe, Cat. B. Br. M. IV, 1879, p. 25. —

Salvadori, Orn. Pap. II, 1881, p. 124.

A male. Kaukas. Coll. van Cloven.

TIMALIIDAE.

Eupetes leucostictus loriae Salvadori.

Eupetes loriae Salvadori, Ann. Mus. Civ. Genova, XXXVI, 1896, p. 102.

Eupetes leucostictus loriae, Rothschild & Hartert, Nov. Zool. X, 1903, p. 230.

One adult specimen. Owen Stanley Mountains. Coll. Henkelman.

TURDIDAE.

Oreocinclla heinei papuensis (Seebohm).

Geocichla papuensis Seebohm, Cat. B. Br. M. V, 1881, p. 158, pl. IX.

Oreocinclla papuensis, Salvadori, Orn. Pap. III, 1882, p. 548.

Oreocichla papuensis, Sharpe, Handl. IV, 1903, p. 137.

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One adult specimen. Mt. Victoria, 12000 ft. Coll. Henkelman. — Our specimen agrees tolerably well with the description in the Catalogue of Birds by Seebohm. The feathers of the crown and of the nape have however no conspicuous subterminal ochraceous spots; the basal half of the inner webs of the secondaries and of many of the primaries is not pale buff, but pure white. This form seems to be very nearly allied to *Oreocincla heinei* Cabanis, of which it is only a subspecies or with which it is very probably identical. I leave open this question, as we have no more specimens of *papuensis* and no specimens of *heinei*.

ARTAMIDAE.

Artamus maximus A. B. Meyer.

Artamus maximus, Salvadori, Orn. Pap. II, 1881, p. 172. — Sharpe, Cat. B. Br. M. XIII, 1890, p. 8.

Three adult specimens. Owen Stanley Mountains. Coll. Henkelman.

PRIONOPIDAE.

Pitohui cristata (Salvadori).

Rectes cristata Salvadori, Ann. Mus. Civ. Genova, VII, 1875, p. 930.

Rhectes cristatus, Salvadori, Orn. Pap. II, 1881, p. 202.

One unsexed specimen. Evidently from Fak-Fak. Coll. Palmer van den Broek.

Pitohui kirhocephalus decipiens (Salvadori).

Rhectes decipiens, Salvadori, Orn. Pap. II, 1881, p. 197.

Pitohui kirhocephalus obscurus, Oort, N. L. M. XXIX, 1907—'08, p. 73.

One adult male. Fak-Fak. Coll. Palmer van den Broek. — In 1907 I named two specimens of an allied form of

Pitohui kirhocephalus in our collection provisionally *obscurus*, for I then could not unite these specimens with *Rhectes decipiens* Salvadori, as his description „rufo-cinnamomeus, subtus valde pallidior,” does not agree with our examples, the colour of the underparts being not „rufo-cinnamomeus, valde pallidior” but much more „aurantio-ferrugineus.” There is no doubt, however, Salvadori’s *decipiens* and my *obscurus* are the same, for in the description of *Pitohui kirhocephalus* (Lesson), which has about the same coloration on back and underparts, Salvadori speaks also of „rufo-cinnamomeus, subtus valde pallidior.”

LANIIDAE.

Cracticus cassicus (Boddaert).

Cracticus cassicus, Salvadori, Orn. Pap. II, 1881, p. 184. —
Gadow, Cat. B. Br. M. VIII, 1883, p. 97.

A female. Sekar near Kaukas, 16 March 1907. Coll. van Cloven.

PARAMYTHIIDAE.

Paramythia montium Vis.

Paramythia montium, Sclater, Ibis, 1893, p. 243, pl. VII.

One adult specimen. Owen Stanley Mountains. Coll. Henkelman.

DICAÆIDAE.

Oreocharis arfaki (A. B. Meyer).

Oreocharis arfaki, Salvadori, Orn. Pap. II, 1881, p. 289. —
Sharpe, Cat. B. Br. M. X, 1885, p. 53.

Two adult males. Owen Stanley Mountains. Coll. Henkelman.

MELIPHAGIDAE.

Ptilotis chrysotis (Lesson).

Xanthotis chrysotis, Salvadori, Orn. Pap. II, 1881, p. 346.

Ptilotis chrysotis, Gadow, Cat. B. Br. M. IX, 1884, p. 238.

One specimen. Kaukas. Coll. van Cloven.

Philemon novae-guineae (S. Müller).

Tropidorhynchus novae guineae, Salvadori, Orn. Pap. II, 1881, p. 357.

Philemon novae guineae, Gadow, Cat. B. Br. M. IX, 1884, p. 274.

An adult specimen. Fak-Fak. Coll. Palmer van den Broek.

Three adult specimens. Kaukas. Coll. van Cloven.

Melipotés fumigatus A. B. Meyer.

Melipotés fumigatus A. B. Meyer, Zeitschr. f. ges. Orn. III, 1886, p. 22, pl. IV, f. 1.

Melipotés gymnops fumigatus, Rothschild & Hartert, Nov. Zool. X, 1903, p. 439.

Two specimens. Owen Stanley Mountains. Coll. Henkelman.

Myzomela rosenbergii Schlegel.

Myzomela rosenbergii Schlegel, Ned. Tijdschr. Dierk. IV (1871), p. 38. — von Rosenberg, Reist. Geelvinkbaai. 1875, p. 138, pl. XVI, f. 2.

Myzomela rosenbergii, Gadow, Cat. B. Br. M. IX, 1884, p. 137.

Five adult males. Owen Stanley Mountains. Coll. Henkelman.

PARADISEIDAE.

Xanthomelus aurea (L.).

Xanthomelus aureus, Rothschild, Tierr. Paradis. 1898, p. 10. — Oort, N. L. M. XXIX, 1907—'08, p. 180.

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Three males in nuptial dress. Evidently from Fak-Fak Coll. Palmer van den Broek. (Two are flat skins of papuan made).

A male in full dress. Evidently from Fak-Fak. Presented by Mr. J. Haga.

Amblyornis inornatus (Schlegel).

Ptilonorhynchus inornatus Schlegel, Ned. Tijdschr. Dierk. IV (1871), p. 51.

Amblyornis inornatus, Rothschild, Tierr. Paradis. 1898, p. 12.

Three males in full dress. Owen Stanley Mountains. Coll. Henkelman.

We have one male in full dress (Tabi Mountains, east of the Mamberano), three males without crests (Arfak district) and three females (Arfak district). The type-specimens are a male without crest and a female, collected by von Rosenberg near Hattam, Arfak district, resp. 20 April and 10 April 1870. The crests of the birds from the Owen Stanley Mountains and also their under wingcoverts are brighter than in our adult male from the Tabi Mountains, which is upon the whole also more brownish with less olive tinge.

Amblyornis subalaris Sharpe.

Amblyornis subalaris, Rothschild, Tierr. Paradis. 1898, p. 12.

Three males in full dress. Owen Stanley Mountains. Coll. Henkelman.

Cnemophilus macgregori Vis.

Cnemophilus macgregori, Rothschild, Tierr. Paradis. 1898, p. 15.

Three adult males. Mt. Victoria, 12000 ft. Coll. Henkelman.

Loria loriae Salvadori.

Loria loriae, Rothschild, Tierr. Paradis. 1898, p. 15.

Three adult males. Owen Stanley Mountains. Coll. Henkelman.

Macgregoria pulchra Vis.

Macgregoria pulchra, Rothschild, Tierr. Paradis. 1898, p. 16.

Three adult specimens. Mt. Victoria, 12000 ft. Coll. Henkelman.

Parotia sefilata lawesi Ramsay.

Parotia lawesi, Rothschild, Tierr. Paradis. 1898, p. 18.

Three males in full dress. Owen Stanley Mountains. Coll. Henkelman.

Lophorina superba minor Ramsay.

Lophorina minor, Rothschild, Tierr. Paradis. 1898, p. 20.

Three males in full dress. Owen Stanley Mountains. Coll. Henkelman.

Pteridophora alberti A. B. Meyer.

Pteridophora alberti, Rothschild, Tierr. Paradis. 1898, p. 20.

An adult male. Evidently from N. W. New Guinea. Presented by Mr. J. Haga.

We have now four adult males, namely: two from the Tabi Mountains, east of the Mamberano, one from Kwatisori, southcoast of the Geelvink Bay and the above-quoted specimen.

Ptilorhis magnificus intercedens Sharpe.

Ptilorhis intercedens, Rothschild, Tierr. Paradis. 1898, p. 25.

Three males. Owen Stanley Mountains. Coll. Henkelman.

Drepanornis albertisi cervinicauda Selater.

Drepanornis albertisi cervinicauda, Rothschild, Tierr. Paradis. 1898, p. 27.

Three males in full dress. Owen Stanley Mountains. Coll. Henkelman.

Seleucides ignota (Forster).

Seleucides ignotus, Rothschild, Tierr. Paradis. 1898, p. 28.

A specimen in the female's plumage. Evidently from Fak-Fak. Coll. Palmer van den Broek.

Three males in full dress. Owen Stanley Mountains. Coll. Henkelman.

Falcinellus meyeri (Finsch).

Falcinellus meyeri, Rothschild, Tierr. Paradis. 1898, p. 31.

Three males in full dress. Owen Stanley Mountains. Coll. Henkelman.

Astrapia stephaniae (Finsch & Meyer).

Astrapia stephaniae, Rothschild, Tierr. Paradis. 1898, p. 33.

Three males in full dress and four females. Owen Stanley Mountains. Coll. Henkelman.

Cicinnurus regia (L.).

Cicinnurus regius, Rothschild, Tierr. Paradis. 1898, p. 34.

Three males. Owen Stanley Mountains. Coll. Henkelman.

Diphylloides magnifica (Pennant).

Diphylloides magnificus, Rothschild, Tierr. Paradis, 1898, p. 36.

„ *magnifica magnifica*, Rothschild & Hartert, Nov. Zool. X, 1903, p. 79.

A male in full dress. Western New Guinea. Coll. Palmer van den Broek.

Two males in full dress. N. W. New Guinea. Presented by Mr. J. Haga.

In the first and in one of the latter specimens the secondaries and the wingcoverts are ochre-yellow, in the third specimen they are dull orange-brown.

Diphyllodes magnifica hunsteini A. B. Meyer.

Diphyllodes magnifica hunsteini, Rothschild & Hartert, Nov. Zool. X, 1903, p. 79.

Five males in full dress and one female. Owen Stanley Mountains. Coll. Henkelman.

Paradisea minor Shaw.

Paradisea minor (typica), Rothschild, Tierr. Paradis. 1898, p. 40.

Paradisea minor, Oort, N. L. M. XXIX, 1907—'08, p. 178.

A female. Fak-Fak. Coll. Palmer van den Broek.

A male and a female. Kaukas. Coll. van Cloven.

Paradisea raggiana Selater.

Paradisea raggiana, Rothschild, Tierr. Paradis. 1898, p. 41.

Three males in full dress. Owen Stanley Mountains. Coll. Henkelman.

Paradisornis rudolphi Finsch.

Paradisea rudolphi, Rothschild, Tierr. Paradis. 1898, p. 43.

Three males in full dress. Mt. Victoria. Coll. Henkelman.

One female. Without definite locality. Purchased from W. F. H. Rosenberg, London.

Phonygammus keraudreni jamesi Sharpe.

Phonygammus jamesi, Rothschild, Tierr. Paradis. 1898, p. 47.

Two adult specimens. Owen Stanley Mountains. Coll. Henkelman.

ORIOLIDAE.

Oriolus striatus Quoy & Gaimard.

Oriolus striatus, Sharpe, Cat. B. Br. M. III, 1877, p. 210.

Mimeta striata, Salvadori, Orn. Pap. II, 1881, p. 473.

A young specimen. Fak-Fak. Coll. Palmer van den Broek.

A male. Kaukas, 28 April 1907. Coll. van Cloven.

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STURNIDAE.

Mino dumontii Lesson.

Mino dumonti, Salvadori, Orn. Pap. II, 1881, p. 466. —
Sharpe, Cat. B. Br. M. XIII, 1890, p. 111.

One male and four unsexed specimens. Fak-Fak. Coll.
Palmer van den Broek.

Melanopyrrhus anais orientalis (Schlegel).

Gracula anais orientalis Schlegel, Ned. Tijdschr. Dierk. IV
(1871), p. 52.

Melanopyrrhus orientalis, Salvadori, Orn. Pap. II, 1881,
p. 463. — Sharpe, Cat. B. Br. M. XIII, 1890, p. 114.

One specimen. Fak-Fak. Coll. Palmer van den Broek.

One specimen. Kaukas. Coll. van Cloven.

One specimen. N. W. New Guinea. Presented by the
Catholic Institution „St.-Louis” at Oudenbosch. This spe-
cimen has the head entirely orange, without a black patch
on the nape. We have a similar specimen from Skroe,
W. New Guinea, collected by K. Schädler, 25 December 1896.

Leyden Museum, January 1909.

NOTE XXII.

A NEW AND CURIOUS BURMESE ASCALAPHID
FROM THE GENOA MUSEUM
(GLYPTOBASIS SPINICORNIS)

BY

Dr. H. W. VAN DER WEELE.

(With 2 text-figures).

Some time ago Dr. R. Gestro at Genoa communicated to me for determination a small collection of Ascalaphidae, made by the late Leonardo Fea in Burmah. As that part of my recently appeared »Monographie der Ascalaphiden» (Catalogue des Collections Sélys, 1908) was then already printed, I publish here the description of the single new and very curious species in this collection.

Glyptobasis spinicornis, nov. sp.

Nearest related to *Gl. dentifera* Wlk. from India by the coloured tips of the wings in the ♀, but larger, about as large as *Acheron trux* Wlk.

Antennae reaching about to the pterostigma, black, in the ♀ straight and simple, in the ♂ very curiously shaped in the basal fourth (fig. 1), which is S-shaped. The basal part is very stout and slightly curved outwards, composed of long joints that bear very short and feeble bristles at the articulations (somewhat remembering the antennae of the ♂ of the brasilian genus *Orphne*).

Fig. 1.



Glyptobasis spinicornis, n. sp. ♂.
Head and basal part of the antennae.

The following part is almost angularly curved inwards and bears two large, equal, sharp spines at the innerside; the rest, which is nearly straight, bears three feebler spines at its base, which increase very distinctly in size towards the tip.

Head black, with dense black villosity on the face and between the antennae. Vertex and occiput yellow. Eyes bronzy.

Thorax and legs black with black villosity, the yellow stripe on the dorsum is as in *G. nugax* Wlk., the oblique stripe on the breast is cream to yellowish.

Abdomen in both sexes shorter than the hindwings, yellowish above, venter and sides black. The gonopoda of the ♂ (fig. 2) have short and somewhat curved app. sup.,

Fig. 2.



Glyptobasis spinicornis, n. sp. ♂.
Upperside of the gonopoda.

the tips of which are thick and broad with many short spines. The genitalvalve is more primitively formed than in the other species of this genus and broadly pentagonal.

The wings are more narrowly petiolated and broader than in *dentifera* and *nugax*. The pterostigma is pale brown to black, with 5 crossveins. The apicalfield has 3—4 rows of cells.

Nervature brown and dense.

In both wings are 8—11 cells between the ramus obli-

quus and the postcosta, in the hindwings this number is larger than in the forewings. Radialsector with 7—8 branches. Between cubitus inferior and hindborder are at the most 14 cells in one row in the forewing, in the hindwing 9 cells. Membrane hyaline in the ♂, in the ♀ the tips of all wings have a brown quadrangular spot, which is of

the same colour as the hindwings of *Acheron*-females and reaches the pterostigma at the anterior side and the first radialsector at the posterior side. The appendix of the forewing is very short and straight.

Body ♂ 32, ♀ 29 mm.; forew. ♂ 35, ♀ 40 mm.; hindw. ♂ 32, ♀ 37 mm.
Abd. ♂ 21, ♀ 17 mm.; gr. br. ♂ 10, ♀ 12 mm.; gr. br. ♂ 8, ♀ 10½ mm.
App. ♂ 2 mm.
Ant. ♂ 37, ♀ 38 mm.
Cost. forew. ♂ 35, ♀ 38.
Cost. hindw. ♂ 31, ♀ 32.

Hab. Burmah.

Two couples, one from Polan, Pegù, August—September 1887, the other from Bhamò, August 1885, collected by L. Fea. Types in the Genoa- and in the Leyden Museum.

Leyden Museum, January 1909.

NOTE XXIII.

PACHYTERIA NIEUWENHUISII, N. SP.

DESCRIBED BY

C. RITSEMA Cz.

Close to and much resembling *P. lugubris* Rits. from Nias (N. L. M. vol. XIV, 1892, p. 215), but smaller (measuring 26 mm. in length) and more vividly colored.

Above opaque, the smaller basal half of the elytra, however, shining. — Head dark blue with green tinges, red in the middle beneath. 1st, 2nd and basal half of 3rd antennal joint dark blue, apical half of 3rd joint and the 4th—7th joints yellow, the 7th spotted with black at the apex above, the subsequent joints black. — Prothorax red, front- and basal margins dark blue, the latter surrounding the coxae and invading the intercoxal part. Without any trace of spine or tubercle laterally; the disk flat, strongly punctured, sharply separated from the sides as if it were a piece led in; the sides and undersurface finely, evenly and very densely punctured, forming a lustreless surface. Scutellum dark blue, with black pubescence. — Elytra metallic green, the smaller basal half bald, shining, rather densely punctured, the larger apical half opaque, very finely and densely punctured and covered with a short and very dense black pubescence; at one third of its length this black portion is crossed by a very narrow transverse band of a pale yellowish pubescence, touching neither the suture nor the lateral margins, and a similar though still more delicate pubescence is present on the shining green basal half just before the black pubescence. — Meso- and metasternum and the abdomen steel-blue, the latter more greenish towards the apex and covered by a silky white pile, especially on the hindborders. The legs steel-blue, the femora strongly punctured, the tibiae more finely. The 5th ventral segment broadly and deeply emarginate, the 6th broadly but less deeply.

Hab. Borneo: Mahakkam river. — The described male-specimen has been presented to the Leyden Museum by Prof. A. W. Nieuwenhuis, to whom I dedicate the species.

Leyden Museum, February 1909.

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NOTE XXIV.

NEW GENERA AND SPECIES OF MEGALOPTERA LATR.

BY

Dr. H. W. VAN DER WEELE.

About 8 months ago I finished my monograph of the Megaloptera (Sialidae) for the „Catalogue des Collections Zoologiques du baron E. de Selys Longchamps.” Though the work is since ready for the press, it cannot yet be printed. As there are many new genera and species described in it and because other workers in this interesting family might describe them before my monograph has been published, I give here short descriptions of them in order to secure their priority.

This order of insects, separated from the other Neuroptera and especially from the Planipennia under the name of Megaloptera, contains two families: the primitive Sialidae and the much higher specialised Raphidiidae.

The first quoted family only contains more genera and tribes and is divided in the following way:

Three ocelli, fourth tarsal joint simple, not bilobed. Large and mediocre forms. subfamily CORYDALINAE Davis.

Ocelli wanting, fourth tarsal joint bilobed prominently. Rather small forms. subfamily SIALIDINAE Davis.

Subfam. CORYDALINAE.

Male with a pair of app. sup. and infer. Antennae mo-

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niliform in both sexes, never pectinate. Head quadrangular, with more or less developed dent at the sides and dendri-form pattern on the occiput.

Wings with more than 3 crossveins between the radius and radialsector. Large forms.

tribus NEUROMINI, nov. trib.

Male with only a pair of app. sup. The app. inf. are absent. Antennae mostly pectinate in the male, moniliform to pectinate in the female. Head triangular, no dent at the sides. Occiput with linguiform pattern.

Wings with only 3 crossveins between radius and radialsector. Mediocre to large forms.

tribus CHAULIODINI, nov. trib.

Tribus NEUROMINI.

Key to the genera.

1. Sides of the head very enlarged, with two dents.
Platyneuromus, n. g. (America).
- Sides of the head with one, more or less distinct dent. . . 2.
2. Head moreover with a tooth on the occiput, mandibles in the male much larger than in the female, body black or darkbrown. Very large forms.
Acanthacorydalis Weele (Asia).
- No tooth on the occiput 3.
3. Dent distinctly developed 4.
- Dent only slightly indicated by an elevated line near the posterior edges of the quadrangular head . . 5.
4. Male mostly with elongate mandibles and larger antennae than in the female. App. inf. clubbed, not clawlike. Large forms with brownish grey wings, punctated with many white dots. Body pale brown.
Corydalis Latr. (America).

Mandibles and antennae equal in both sexes. App. inf. of male clawlike. No pale dots in the wings . . 6.

6. App. sup. of the male clubbed at the apex. Genitalvalve absent, penis very long. Large forms with dark coloured body and wings. *Neoneuromus*, n. g. (Asia).

App. sup. of the male not clubbed at the apex. Genitalvalve well developed, penis short. Mediocre forms with pale yellow body and wings. Between radius and radialsector four crossveins. *Neuromus* Ramb. (Asia).

5. App. inf. clubbed, with a very minute claw at the tip. App. sup. acute, not clubbed at the apex. Body and wings as in *Neuromus*. Between radius and radialsector three crossveins. *Chloronia* Banks (America).

App. inf. clawlike, app. sup. acute or bifurcate, short. Wings elongate, with darker groundcolour and pale spots. Body pale. *Protohermes* Weele (Asia).

App. inf. as in *Protohermes* but app. sup. always bifurcate. Wings broad at the base, narrowed at the tip, very darkbrown with creamwhite spots. Body black. *Hermes* Gray (Asia).

Gen. *Corydalis* Latreille (1802).

This name has the priority for *Corydalis* of the same author, the latter being two years younger.

The following species are new:

Corydalis primitivus, nov. spec.

This new species remembers in form, size, colour and pattern of the wings *C. affinis* Burm. and *cornutus* L. The nervature is not so dense as in the former and not so open as in the latter species. Mandibles of the ♂ mostly short, but when elongated they are nearly straight. The genitalia are rather primitive as the app. sup. are straight,

nearly parallel, not forming a forceps. The tips are straight and there is a dilatation at the base about as in *C. armatus* Hag. The app. inf. are long and clubbed. The genital-valve is quadrangular with prominent posterior edges. The penis is about as in *C. nubilus* Er.

Habitat: Argentine Republic.

A series of 5 specimens in the Leyden Museum and one female in the collection de Selys.

Platyneuromus, nov. gen.

Characterised by the two broad dents of the very flat head and by the genitalia of the ♂.

The type is *Corydalis soror* Hagen from Mexico.

Neoneuromus, nov. gen.

This genus is created for *N. sikkimensis* Weele, *fenestralis* Mc. Lachl. and *latratus* Mc. Lachl. with their subspecies.

Gen. *Chloronia* Banks (1908).

Banks only indicates it as a name, giving no description. He enumerates *corripiens* Wlk. in it, which species I accept now as the type. *N. hieroglyphicus* Ramb. is a second species. I give here the short description of two new species.

Chloronia meridionalis, nov. spec.

Nearest related to *corripiens* Wlk.

Antennae black, the basal fourth yellow. Body yellow, tips of mandibles and spot between the ocelli black. Pronotum with two short, black, longitudinal lines in the anterior half and two ditto in the posterior one, which latter are more removed from one another than those in the anterior half. Legs yellow, knees darkbrown. Abdomen yellow.

Wings pale yellowish grey. Nervature brown, the cross-

veins black. In the forewings there are fuscous streaks or points along the hindborder to the tip as in *corripiens*, and also similar points in the cells between the branches of the radialsector. In the hindwing are only three small fuscous points between media and radialsector visible in the first cell.

The genitalia of the ♂ are similar to those of *corripiens*, the app. inf. are very different and the genitalvalve is more like that of *hieroglyphica*. The penis much remembers that of *corripiens*, but it has two small tubercles as in *bogotana*, but much smaller.

Body ♂ 25 mm., forewing 33 mm., hindw. 30 mm., ant. 11 mm.
Abd. ♂ 10 mm., gr. br. 12 mm., gr. br. 11 $\frac{1}{2}$ mm.

Habitat: Minas Geraës, South Brazil.

One male from Minas Geraës, 14 November 1900, Kennedy coll., is in my collection in the Leyden Museum.

Chloronia bogotana, nov. spec.

Nearest related to *corripiens* Wlk., but much resembling *hieroglyphica* Ramb. in the form of the penis and in the coloration of the wings.

Antennae yellow. Head reddish yellow, tips of mandibles and two longitudinal lines on the occiput, black. Prothorax with traces of dark spots in the anterior and posterior angles. Meso- and metathorax and abdomen of the same colour. Legs luteous brown, the last tarsal joint shining black above, the knees of the anterior legs dark-brown, those of the other legs paler.

Wings with yellow membrane and nervature, the crossveins nearly all black, only paler in the posterior wings. The discal crossveins of the forewing are broadly margined with a pale bluish grey colour, that also is to be seen as spots in the cells. Costalveins, the crossveins at the origin of the media and those distalwards from the cubiti are deep black. The hindwings have paler crossveins and the dark spots are absent.

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The genitalia of the male remember by their elongate clubbed app. inf. and by the curved app. sup. those of *corripiens*. The genitalvalve also is similar, but the penis is more like that of *hieroglyphica*, as it consists of two digitiform hairy prominences.

Body ♂ 30 mm., forew. 36 mm., hindw. 32 mm., ant. 11 mm.
Abd. ♂ 15 mm., gr. br. 13 mm., gr. br. 11 mm.
App. sup. ♂ 3 mm.

Habitat: Columbia.

One male from Bogota, Columbia, purchased from Doncaster, is in my collection in the Leyden Museum.

Protohermes davidi, nov. spec.

Much resembling *P. albipennis* (Wlk.) from India, but larger, with much denser wingnervature and also very different in the genitalia of the male.

Body luteous. Tips of mandibles and the spot between the ocelli, black. Antennae black, the two basal joints luteous, with a brown annulus in the middle. Prothorax with a broad, black streak at each side. Mesothorax with two black spots. Legs luteous to fuscous.

Wings large and very broad, with yellow nervature, which becomes brown towards the apex and borders; there are no well-defined pale spots. In the hindwings the yellow nervature occupies only about the half, in the forewings nearly two thirds of the wing. In the latter the postcosta and cubitus inferior with adjoining nervature are fuscous. The crossveins are very numerous and the number of costalveins in the forewing can increase to 46, in the hindwing to 39.

The gonopoda of the male are yellow. The app. sup. are broadly triangular with rounded tip. The genitalvalve consists of two divergent acute triangular prominences, which are as long as the app. sup. The app. inf. are short, clawlike, with black tips.

Body ♂ 30 mm., forew. 48—52 mm., hindw. 42—46 mm., ant. 14 mm.
 Abd. ♂ 15 mm., gr. br. 16—18 mm., gr. br. 16—18 mm.
 App. sup. ♂ 3 mm.

Habitat: China.

Two males, collected in Mou-Pin by A. David in 1870, are the only specimens known as yet. The types are in the Paris- and in the Leyden Museum.

Hermes sumatrensis, nov. spec.

Nearly related to *maculipennis* Gray and probably a subspecies of it, but differing by the apical spots of the wings, which are about twice larger than in that species and about one half of those of *maculifera* Wlk. The creamwhite spots of the forewings are all isolated, more numerous and somewhat larger than in *maculipennis*. There is no basal cream-coloured spot at the hindborder of the forewings, only two isolated round spots represent the reminiscences of it. In the hindwings this spot is much larger, about as large as in *maculifera*, and it reaches the anal angle, so that it is about one and a half larger than in *maculipennis*. In the middle it has a long apical prominence and it occupies about the basal half of the wing.

As the ♂ is still unknown, it may be that there are no differences in the gonopoda with *maculipennis* or *maculifera*, which both species it seems to connect.

Body ♀ 25 mm., forewing 34 mm., hindw. 30 mm.
 Abd. ♀ 12 mm., gr. br. 12 mm., gr. br. 12 mm.

Habitat: Sumatra.

I examined a female from Pajakombo, East Sumatra, collected by the late french naturalist H. Rouyer. The type is in the Leyden Museum.

Hermes maculifera tonkinensis, nov. subsp.

Very similar to *maculifera*, but the wings are relatively broader, the white spots less numerous, but larger.

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The basal white spot of the hindwings also occupies nearly half the wing, but in the anterior part there is an isolated large white spot, which is always connected with the basal patch in *maculifera*. On the hindborder the white colour surpasses the anal angle much farther, but the dark colour is not gradually increasing in breadth, but ends with an acute prominence in the basal patch.

Body ♀ 27—33 mm., forew. 38—41 mm., hindw. 34—37 mm.
Abd. ♀ 9—20 mm., gr. br. 13—14 mm., gr. br. 14—15 mm.

Habitat: Tonkin.

Two specimens, both females, from Tonkin. The types are in the Paris- and in the Leyden Museum.

Hermes selysi, nov. spec.

Probably only a local form or subspecies of *maculifera* from which it differs in the following points:

About one third smaller in size. Spots in the forewings very small, pointlike, the apical spots relatively half so small, only somewhat larger than in *sumatrensis*. In the hindwings the basal spot is very small and irregularly trapeziform; it reaches about to the middle of the anal-border and is not connected with the other spot.

The female has the pronotum black, but in a specimen that may be a damaged male it is of a light orange colour without indications of black spots.

Body ♀ 25 mm., forew. 25—32 mm., hindw. 23—29 mm.
Abd. ♀ 10 mm., gr. br. 9—11 mm., gr. br. 8½—11 mm.

Habitat: Sylhet and Assam.

I examined four specimens. The damaged one, that seems to be a male, is from Sylhet and in the Collection de Selys. The others are from Khasia Hills, Assam, and are all females. Two of them are in my collection in the Leyden Museum, the third is in the British Museum.

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Tribus CHAULIODINI.

Key to the genera.

- Antennae moniliform or subserrate in both sexes . 1.
 Antennae pectinate in the male, moniliform or subserrate in the female 2.
 Antennae pectinate in both sexes.

Ctenochauliodes, n. g. (Asia).

Antennae very long in both sexes, reaching about at two thirds of the forewing; in the male with long hairs at the joints and the app. sup. bifurcated.

Neohermes Banks (N. America).

1. Antennae reaching about to or beyond the middle of the forewings. Wings spotted all over with small pale fuscous dots, forming in some species confluent crossbands in the forewings and in some other species larger spots between media and radialsector in the hindwings. App. sup. of the male long, straight or curved and forming a forceps, always longer than the last segment and not truncated or bifurcated at the apex.

Archichauliodes, n. g. (New Zealand, Australia, S. Africa).

As in *Archichauliodes* but the app. sup. of the male truncated or bifurcated. *Protochauliodes*, n. g. (Chile).

Antennae subserrate in the male, moniliform in the female. App. sup. of the male very short and truncated.

Parachauliodes, n. g. (Japan, China).

2. Forewing spotted with many small dark points, which seldom form dark crossbands. App. sup. of the male moderately long, acute and straight.

Chauliodes Latr. (N. America).

Forewings as in *Chauliodes* and *Parachauliodes* or with larger spots, which form crossbands, that can enlarge

so much, that the wings are nearly wholly suffused with a dark colour. App. sup. of the male stout, not exerted, truncated. *Neochauliodes*, n. g. (Asia, Mal. Arch.).

Forewings nearly black, with some pale creamwhite spots in the middle. App. sup. of the male very short and inconspicuous. Penis very long, deposed in a long oval cavity of the last segment. Genitalvalve very small. Antennae serrate to pectinate in the male, subserrate in the female. . . . *Nigronia* Banks (N. America).

Archichauliodes, nov. gen.

For the characters of the genus compare the key. The type is *Ch. dubitatus* Wlk. from New Zealand, which is the most primitive species. Moreover belong to this genus *Ch. guttiferus* Wlk. from Australia, and *Ch. pusillus* Mc. Lachl. from South Africa.

Protochauliodes, nov. gen.

The type of this primitive genus is *Ch. cinerascens* Blanch., from Chile. Another chilean species is *Neohermes humeralis* Banks. The genus is the precursor of *Neohermes* Banks.

Neohermes Banks (1908).

Banks, Proc. Ent. Soc. Wash. X, p. 29 (1908).

Banks gives in the description of his *N. humeralis* p. 27, no description of the genus. Further, on pp. 28 and 29, he gives its characters and mentions as the type *Ch. filicornis* Banks, which is a synonym of *Ch. californicus* Wlk. I accept the genus for this type, mentioned on p. 29, where the full description of the genus is given. As other species belonging to it he mentions: *californicus* Wlk., *angusticollis* Hagen (also a synonym of *californicus* Wlk.), *cinerascens* Blanchard and *N. humeralis* Banks. Though the characters given are only concerning the nervature and are to

be applied both to *Protochauliodes* and *Neohermes* together, I redescribed the latter in my Monograph for the species *californicus* Wlk. and *disjunctus* Wlk. These species occur in N. America and on Vancouver Island.

Parachauliodes, nov. gen.

More or less between *Chauliodes* and *Neochauliodes* and well enough distinct. The type is *Ch. japonicus* Mc. Lachl. from Japan. Moreover the following new species from Korea belongs to this genus.

Parachauliodes continentalis, nov. spec.

Nearly related to *japonicus* and very similar to it, but distinct by the more robust body, broader and shorter wings which are darker coloured, and by the gonopoda of the male.

The app. sup. are broader than long, trapeziform, without an excision of the hindborder, which is straight and oblique. Tubercle oval, larger, situated at the lower angle of the hindborder and being parallel with it. Penis and genitalvalve invisible in the single dried specimen.

Body ♂ 33, ♀ 32 mm., forew. ♂ 47, ♀ 46 mm., hindw. ♂ 42, ♀ 41 mm.
Abd. ♂ 20, ♀ 16 mm., gr. br. ♂ 15, ♀ 14½ mm., gr. br. ♂ 15, ♀ 14½ mm.
App. ♂ 1½ mm.

Cost. forew. 29—30.

" hindw. 28—29.

Habitat: Korea.

One couple from Korea in the British Museum.

Neochauliodes, nov. gen.

This is the asiatic genus which is nearly the highest specialised of the tribe and contains the following new species.

Neochauliodes khasianus, nov. spec.

Chauliodes pusillus Weele nec Mc-Lachl., Notes Leyden Mus. XXVIII, p. 256, pl. 4, fig. 4, ♂ (1907).

Nearly allied to *simplex* but considerably smaller, with

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relatively much narrower and more spotted wings. The pterostigmatical markings are very indistinct in the forewing, absent in the hindwing. The forewing is spotted with numerous very indistinct greyish brown dots, which give the membrane a nearly homogeneous, grey-brown tinge. Hindwing much paler and without distinct markings.

In both wings are three brown points between radial-sector and media. Nervature brown, the crossveins yellowish white. Costalfield of the forewing dark coloured.

Body grey-brown. Antennae very long, reaching beyond the middle of the forewing, black, long-pectinate. Legs long, femora red, tibiae brown, tarsi nearly black.

Body ♂ 10 mm., forew. 22 mm., hindw. 20 mm., ant. 13 mm.

Abd. ♂ 4 mm., gr. br. 7 mm., gr. br. 7 mm.

Habitat: Assam.

One male from Assam, Khasia Hills, in my collection in the Leyden Museum.

Neochauliodes sinensis occidentalis, nov. subsp.

Chauliodes sinensis Weele, Notes Leyden Mus. XXVIII, p. 262, partim (1907). Omei Shan.

Somewhat larger than typical *sinensis*-specimens and characterised by the milky hyaline membrane on which the dark pattern is very distinct. The oblique band of the forewing is larger and mostly connected with the dark ante-pterostigmatical spot. In the hindwing it is narrower, nearly equal in breadth or gradually pointed towards the hindborder.

The male is distinguished from the female by its less distinct pattern and narrower oblique bands.

Habitat: Western China, Omei Shan.

The types are in the British- and in the Berlin Museum.

Neochauliodes sinensis meridionalis, nov. subsp.

Nearest related to the foregoing subspecies and of the same size, but distinct by the darker coloured wings. The

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posterior- and abdominal border of the hindwing is suffused with fuscous and connected with the oblique band, which also is broader at the posterior end. The marginal and submarginal spots of the forewing are very distinct and clear. The marginal ones are fused together into a narrow fuscous border, which is still broader in the hindwing.

Habitat: Southern China.

Some specimens from Tonkin, in the Paris- and in the Leyden Museum.

Neochauliodes koreanus, nov. spec.

Nearly related to *sinensis* Wlk.; probably a subspecies of it.

Body fuscous, the prothorax orange or fuscous with traces of orange colour.

Wings smaller than in *sinensis*, but of the same form, very darkly coloured, by increasing of the fuscous colour, so that only a triangular hyaline spot at the base of the wings, included between the radius, cubitus and first row of crossveins and another smaller, more trapeziform one in the apical-area are hyaline. The apical one has the ends obtusely denticulated.

The costalfield is hyaline, except a brown patch in its middle in the forewing.

Body ♀ 22 mm., forew. 33—35 mm., hindw. 30—32 mm., ant. 12 mm.

Abd. ♀ 9 mm., gr. br. 13 mm., gr. br. $11\frac{1}{2}$ mm.

Cost. forew. 28—33.

" hindw. 26—29.

Habitat: Korea.

Two females from Korea (the types) are in the British Museum.

Neochauliodes sundaicus borneensis, nov. subsp.

The Bornean subspecies differs from the Java- and Sumatra-specimens in the following characters:

Head and thorax yellow, a dark spot between the ocelli and on each side of the occiput. Prothorax with four black

points or streaks as in *Neuromus testaceus*. Meso- and metathorax with a black spot as in *sundaicus*. Abdomen black. Legs yellow, only the last 3—4 articulations of the tarsus brown. Antennae black.

Wings somewhat narrower and more elongated. The two dark points between media and radialsector are nearly invisible or absent. The dark spots of the forewing are very indistinct and less numerous than in *sundaicus*. Nervature of the same colour, but the costalveins of the hindwing yellow.

Body ♀ 22 mm., forew. 25—28 mm., hindw. 22—24 mm., ant. 11 mm.

Abd. ♀ 12 mm., gr. br. 9—11 mm., gr. br. $8\frac{1}{2}$ — $9\frac{1}{2}$ mm.

Cost. forew. 23—25.

" hindw. 21—23.

Habitat: Borneo.

One female-specimen (the type) from the Mahakkam river, collected by Prof. Dr. A. W. Nieuwenhuis, is in the Leyden Museum. Another defective one from Sandakan, that probably is a male, is in the Paris Museum.

Neochauliodes obscurus, nov. spec.

A very aberrant species, well-characterised by the shining black colour of the body, legs, antennae etc.; only the mouthparts orange, except the tips of mandibles which are black. Antennae serrate in the female.

Wings broadly oval, black, the humeri orange red, those in the hindwings in lesser extension than in the forewings. Costal-area in the forewing with some hyaline, whitish spots, in the hindwing wholly black. Pterostigma cream-white in both wings, distalwards from it one or two large, hyaline spots in the apicalfield and a somewhat smaller one between media and cubitus in the forewings. In the hindwing this spot reaches more proximalwards and surpasses the radialsector, almost touching the radius. There are in the apicalfield of both wings traces of light streaks in the cells, and in the hindwings are similar

streaks between the lower cubitus and the analveins. Nervature black, except in the light spots and some veins of the apicalfield, which are yellow.

Body ♀ 28 mm., forew. 37 mm., hindw. 34 mm., cost. forew. 25.
Abd. ♀ 13 mm., gr. br. $14\frac{1}{2}$ mm., gr. br. 15 mm., cost. hindw. 25.

Habitat: India.

One female from Manipur (Dr. Watts) is in the British Museum.

Ctenochauliodes, nov. gen.

This genus is characterised by the pectinate antennae in both sexes.

The type is *Ch. nigrovenosus* Weele from Tonkin.

Subfam. SIALIDINAE.

This subfamily only consists of one tribe, the SIALINI, which contains only two genera: *Sialis* and *Protosialis*.

Protosialis, nov. gen.

Body and wings more slender than in *Sialis*. Colour of the body black with orange. Antennae in the male thick and pilose, in the female thin and naked.

Wings elongate and narrow, elliptical, with dark membrane and thin nervature, so that the latter is not so distinct. The costal-area is not enlarged before the middle but gradually narrowed. The costalveins have an oblique direction, not a vertical one as in *Sialis*. The radialsector has two branches, the first of them being one-forked, the second simple and as long as the last simple end of the radius. In *Sialis* these last two branches are always forked.

Habitat: North- and Central America, Cuba and Chile.

The type of the genus is *S. americana* Ramb., and other species of it are *mexicana* Banks, *bifasciata* Hagen and *chilensis* Mac Lachlan.

Sialis japonica, nov. spec.

Sialis spec. Mac Lachlan, Ent. monthl. Mag. VII, p. 146 (1870), Japan;
Transact. Ent. Soc. Lond. 1875, p. 174 (1875).

This species belongs to the nearest related of *fuliginosa* by its external characters, size etc.

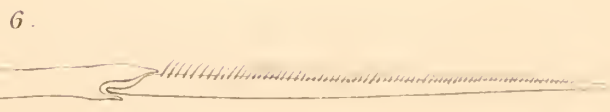
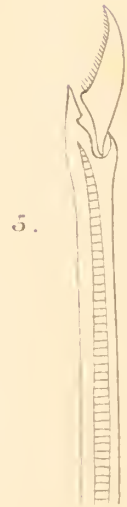
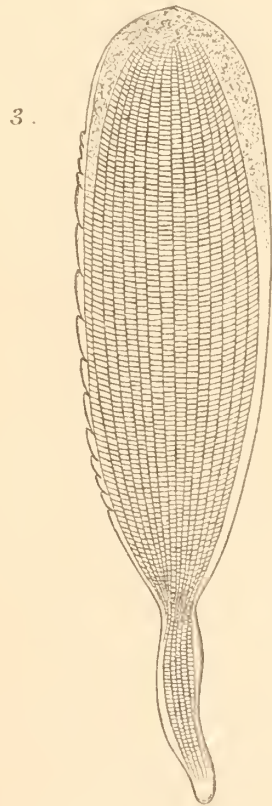
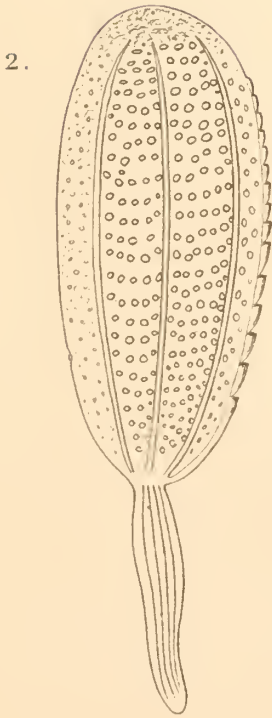
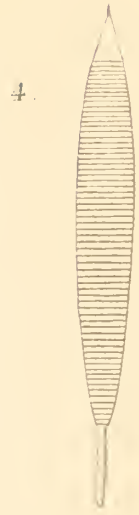
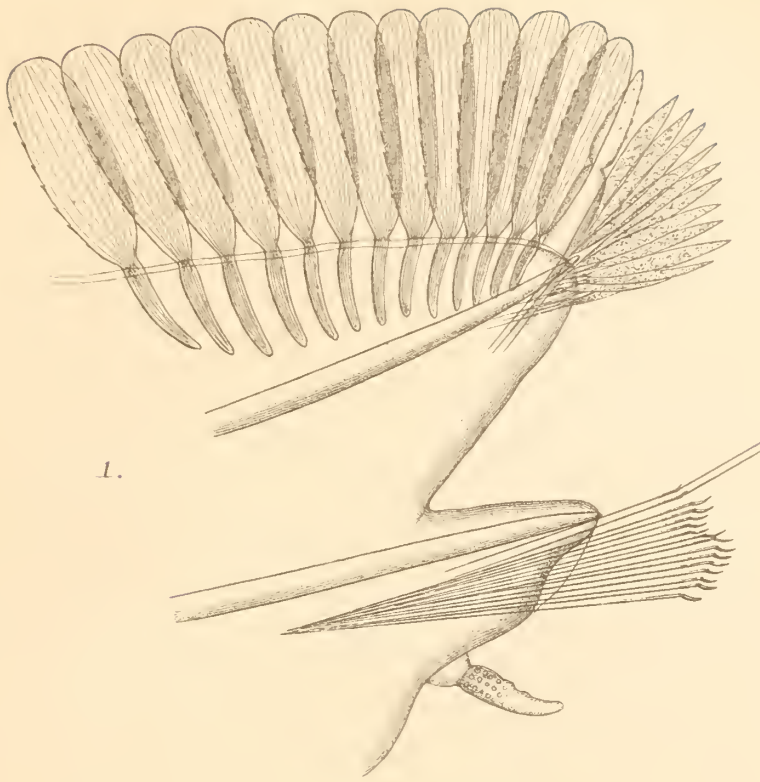
The costa is black at the base, the two markings on the occiput are somewhat divergent and the wings are more or less dark smoky brown.

The genitalia, however, are very different and as the female only is known, there is an interesting resemblance with *infumata* Newm. from N. America, as the hindborder of the 7th sternit bears a small semicircular excision in the middle. The 8th sternit is a solid piece with straight hindborder and broadly bilobed frontborder. The first bears in the middle a hyaline hexagonal piece, which has a small distal knob.

Habitat: Japan.

I examined three females from Japan in de Selys' collection, and in the Museum of Paris and of Leyden. The male is unknown.

Leyden, February 20, 1909.



Dr. R. Horst del.

Firma P. W. M. Trap impr.

Bharwania spec.

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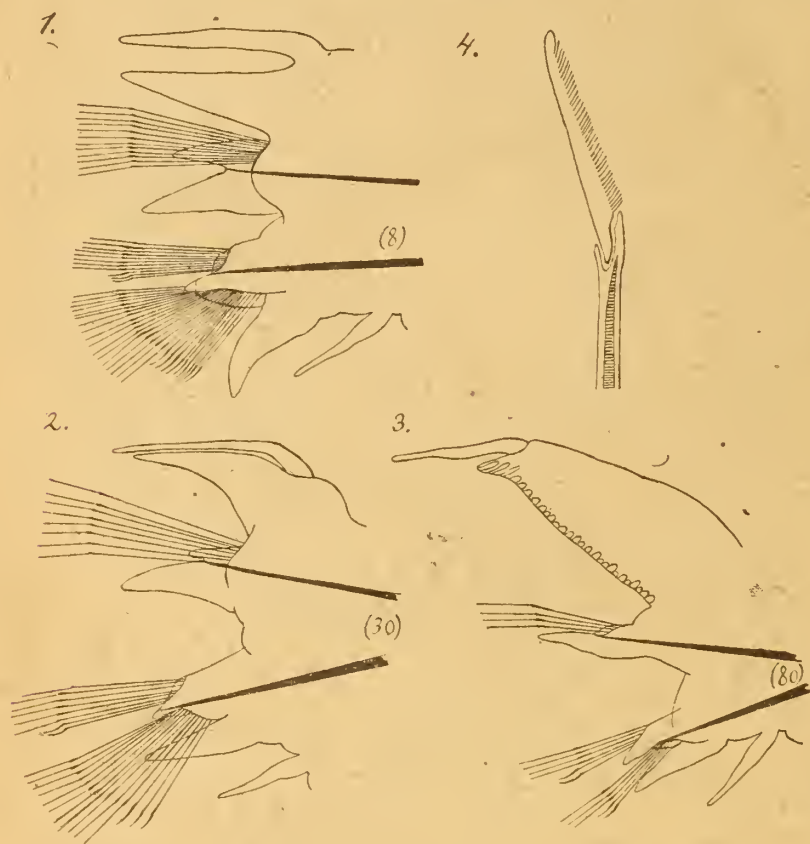
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rences in that respect, for in some of them the longest tentacular cirri reach the 8th, even the 9th segment, whereas in others, from the same locality, they do not extend farther backwards than to the 5th segment or the anterior border of the 6th one. Therefore, in my opinion, there cannot be assigned a great systematical value to this character. Lastly only remains the different number of teeth in the maxillae of both species, for in *N. Perrieri* there are only 4 to 5 of them, whereas the jaws of *N. succinea* possess 8 to 9 teeth. Though the maxillae of the Norderney-specimen have the teeth not very distinctly separated, and hardly 6 or 7 of them can be recognized, all our Zuiderzee-worms show a great number (8 to 9) of distinct teeth. The question therefore remains, whether in all specimens of *N. Perrieri* the teeth of the jaws are so less developed, as described by de Saint-Joseph. On the contrary I observed a remarkable agreement in the arrangement of the paragnathi of the proboscis of both species; for in *N. Perrieri*, as stated by de Saint-Joseph, both lateral groups upon the dorsal side of the basal region of the proboscis (VI) consist of a circle of 6 to 7 small paragnathi around a large central one. Now this character is also very distinct in the Norderney-specimen and is also visible in most of the Zuiderzee-worms. Upon the dorsal median area (V) there are usually two paragnathi, obliquely placed next to each other. As for the paragnathi of the maxillary region in the Norderney-specimen, group I contains 3 of them, placed behind each other, quite like in *N. Perrieri*; however in some of our Zuiderzee-specimens this number amounts to 6.

With regard to the shape of the superior ligule in the parapodia of the posterior segments, perhaps it could be concluded from the figures of Ehlers (pl. XXII, fig. 21), that with *N. succinea* this lobe is more developed in a horizontal direction and that the dorsal cirrus is hardly extending beyond the tip of the ligule. However I believe, that the imperfectness of this figure must be ascribed to the rather indifferent state of preservation of the worm;

for, as already stated by Leuckart, it could also be observed in the Norderney-specimen, that in the posterior segments of the body the dorsal cirrus is more and more reaching the tip of the ligule and finally projects a good deal beyond it. Along the inferior border of the elongated ligule I observed always a series of dark coloured glands.



Figs. 1—3. Parapodia of *Nereis succinea*, from the left side, in posterior view. The numbers in brackets indicate the serial number of each parapodium.

Fig. 4. A falcate bristle of the same, highly enlarged.

Comparing the figures of parapodia, taken from a Zuiderzee-specimen of *N. succinea* with those from *N. Perrieri*, published by de Saint-Joseph, one will not hesitate about the identity of both species. Consequently the conclusion that one of our northern Annelids should have such an unusually limited geographical distribution, as hitherto is ascribed to *Nereis succinea*, can no longer be maintained.

Leyden Museum, November 1908.

Pronotum narrower than the head, as broad as long, anterior margin truncate, posterior margin rounded, sides straight. Prozona brown red, metazona dark brown in the centre and white at each side.

Elytra short, but longer than pronotum, blackish brown, with a round white discoidal spot, the apical extremity white.

Wings abbreviated.

Femora and tibiae rather thick, brown; tarsi slender, yellow, 3rd segment not very hairy.

Abdomen convex, shining, purple-black, very minutely punctulated; stout in the middle, tapering towards the apex.

Last dorsal segment angustate and truncate.

Forceps subcontiguous, straight, tapering, hairy.

Hab. Java: Semarang. — 1 ♀ in the Leyden Museum. (Edw. Jacobson, 1896).

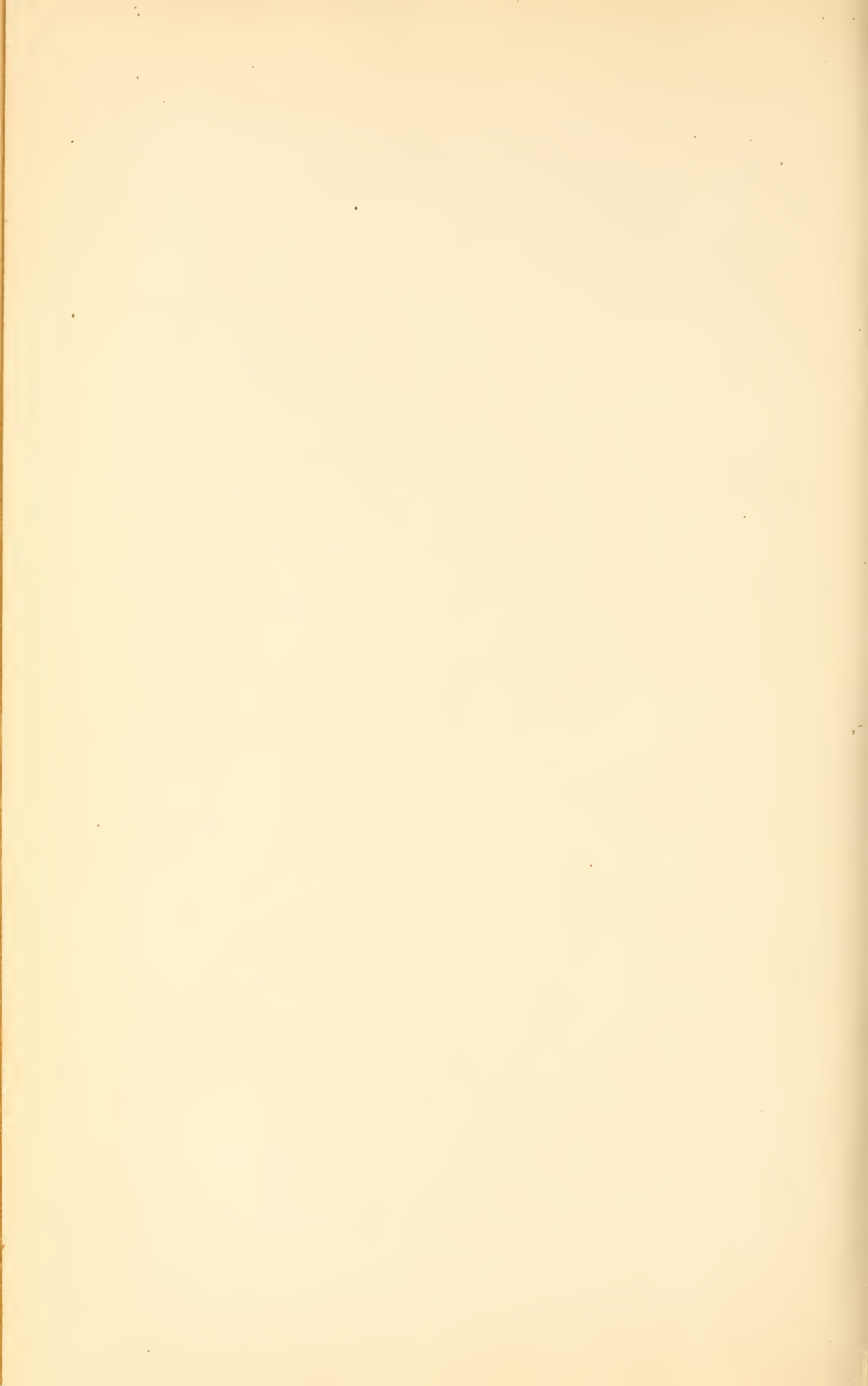
This species, which has the distinction of being the smallest earwig known, somewhat resembles *L. feae* in colour; it may be known by the large, wide and tumid head and by the coloration of the elytra and pronotum. These points are so distinctive, that I have not hesitated to name and describe it, even though the male is not known.

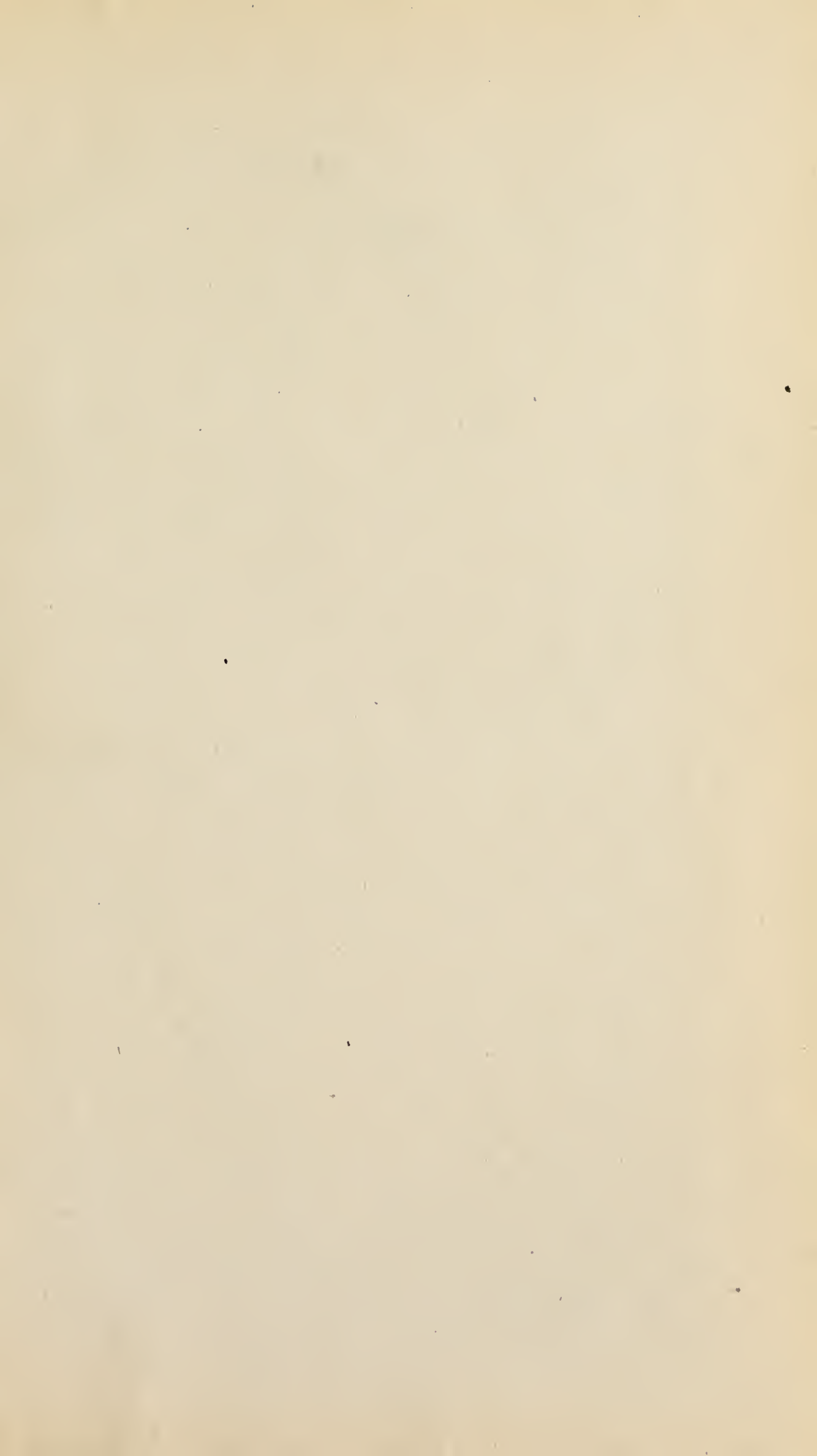
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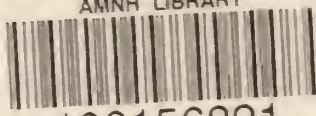




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