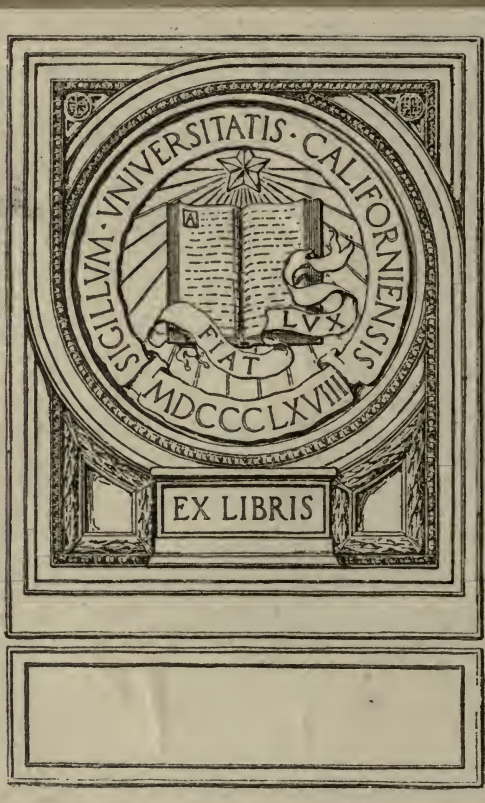


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Jewish Colonization
in Palestine

Methods, Plans
and Capital

BY
JACOB OETTINGER

Agricultural Engineer

Published by the
Head Office of the Jewish National Fund

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THE STATE OF CALIFORNIA

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Methods of Jewish Colonization in Palestine

INTRODUCTION

The treatment of the questions discussed in this book may seem rather inopportune if one bears in mind merely the existing situation and the prospects, at present so obscure, of further Jewish activity in the settlement of Palestine. But if one cherishes the least hope that, whatever the fate of Palestine may be after the war, our claims in regard to colonization in that land may be fulfilled, the question of the financial means that will be necessary for a realization of the possibilities that present themselves, is one that cannot be considered early enough.

The discussion of the question of a Jewish colonization in Palestine upon a large scale has quite recently been resumed in the press. The agricultural possibilities of the land and its capacity for a really extensive Jewish Colonization are being discussed in connection with the events of the war and with an eventual emigration of the Jewish masses from Eastern Europe. The problem of the financial means necessary for the realization of such plans has also been dealt with lately in various articles and pamphlets.

In order to be able to arrive at an answer to the question of the capital necessary for a more extensive agricultural colonization than the present, one must first be quite clear about the methods of colonization to be applied in the future.

How shall we colonize? This question will become particularly acute if, for colonizing activity in Palestine, other general conditions should arise than those that existed before the war. If changes take place that open up before us new perspectives, will we not be more or less unprepared in regard to the manner in which we should make use of them?

Let us assume that immediately or soon after the war we shall possess not merely the unlimited possibility of emigration into Palestine, but also certain concessions regarding the acquisition of land and colonization. Let us assume that under the influence of the Jewish question, which the war has made more burning than ever, special rights will be granted to us in Palestine, in the interest of promoting the density of population. Should this presupposition prove correct, we shall have to reckon not only what capital is requisite for the utilization of the new conditions,

but, in the first place, in what way these shall be used for our national aims of Colonization.

But even in case everything remains exactly as before in regard to the acquisition of land, taxation, general security, etc., and we continue our work of settlement after the war under the same conditions as before the war—even in such a case we must try to arrive at as clear an idea as possible about the methods of colonization to be employed in the future.

An attempt will be made in the following pages to describe briefly the methods of agricultural colonization hitherto employed in Palestine as well as those current at present in other countries. Certain principles will then be advanced that must be observed in colonizing activity. Thereupon follows the calculation of the capital requisite for individual types of farms possible in Palestine. This calculation forms the basis of the inquiry respecting the expenditure necessary for the development of complete Colonies. Finally, an attempt is made to estimate the entire capital requisite for a systematic agricultural colonization in Palestine during the next period of our settlement work, after the conclusion of peace.

The adoption and execution of a methodical plan in regard to the establishment of ever new colonies will result in an accelerated influx of Jewish farmers and farm laborers into Palestine, a constantly growing union of Jewish labor with Jewish soil, and an incessantly increasing development of national agriculture.

May the rate of Palestinian Colonization, which many hitherto regarded as normal, very soon be recognized as much too slow, and may the conclusions thus be drawn in favor of the development of a correspondingly wide Jewish colonizing activity in Palestine, reposing upon firm foundations.

(A.) Methods of Colonization.

In the development of Jewish colonization in Palestine that has hitherto taken place, the following methods have been employed:

1. The method of philanthropic colonization.
2. The enlistment of individual private initiative.
3. The enlistment of private initiative organized in the form of settlement and plantation companies.
4. Enterprises of the co-operative method of settlement.
5. The first beginnings of national colonization.

We shall now endeavor to characterize as briefly as possible the value of these various forms of Jewish colonization in Palestine. Palestinian experience has taught us rather quickly that philanthropic colonization precludes the healthy development of its creations, if it adheres to its purely charitable methods and is not extended upon an economic basis and in accordance with national endeavors. The initiative of the settlers is undermined by constant philanthropy. Real and apparent acts of injustice are inevitable in the practical working of philanthropy. Dissatisfaction and discontent in the circles of the colonists are unavoidable consequences of the unequal treatment of the suppliants for the favor of the distributors of benefits. The majority of the colonists feel that they are being passed over in the interests of the favored few. The sound development of the settlements proves in the long run to be incompatible with such feelings of the colonists. On the other hand, the supply of funds by benevolent men and institutions, even the most wealthy and generous, must come to an end pretty soon if the settlements assume considerable proportions, should the philanthropic beginnings be incapable of developing into economic and national undertakings.

The disadvantages of the philanthropic colonization with its system of patronage and all the evils ensuing therefrom can be alleviated to a certain degree by an improvement of the administrative system, such as has taken place in the transference of the Rothschild Colonies in Palestine to the administration of the Jewish Colonization Association. Since the system of "support" and the unlimited power of the administration in the philanthropic colonies has been abolished and free play has been allowed to the initiative of the colonists, the valuable feature in the colonies under the management of the "J. C. A.," namely, the systematic laying-out of each single colony, in contrast to the lack of system of many other private undertakings, must receive fitting appreciation. On the other hand, the various defects of this colonization,

which must be corrected by a national influence, and which at present consist particularly in the employment of alien labor on a large scale by the colonists, must not be overlooked.

**Individual Private
Colonization.**

The settlement of individual colonists of more or less means in existing colonies, as was so often the case, especially in the Colony of Petach-Tikvah, does not really constitute a special system in itself, but emerges as the result of promising conditions in the colonies concerned. In this type of settlement, too, the evil exists of a liberal use of alien labor. In future the securing of human and financial resources of a disconnected character will not acquire the significance of a methodical and extensive plan until large numbers of settlements will be able to attract considerable quantities of individual settlers. The corrective consisting in the predominant share of the labor being supplied by the members of the family will have to be applied here, too. The adoption of individual and scattered private colonization cannot come into consideration as the independent method of extensive colonization. On the contrary, the growth of individual new estates, which are to be built up by one's own initiative in already existing colonies, must be achieved as the result of a general and prosperous development of colonization.

**Private Company
Colonization.**

The establishment of farms in Palestine through the collaboration of private individuals and funds has already for some considerable time been tried with notable success by the Society "Menuchah Venachlah," by which the Colony of Rechoboth was created and developed. The same idea underlies the numerous plantation companies or "Achuzoth" founded before the war. But the "Achuzoth," which do not satisfy their aim unless each of them lays out a colony, have so far practically disregarded this necessity, and look upon the laying-out of plantations merely as the duty of their members. In order that every "Achuzah" company, like the "Menuchah Venachlah" Company, should become the founder of a colony, we shall in future have to work out not only estimates of costs of individual contiguous plantations, but also farming plans for the various possible types of estates in Palestine, and above all, general plans of entire colonies and financial budgets for such colonies. Besides, the "Achuzoth" need a general revision of their principles, in order to become important factors of Jewish colonization in Palestine. We shall have an opportunity of recurring to these questions later.

**Co-operative
Colonization.**

The method of co-operative colonization was suggested by Professor Dr. Franz Oppenheimer's project of a Co-operative Settlement. But the co-operative settlement established at Merchaviah, according to Professor Dr. Oppenheim's plan, by moneyless farm laborers does not represent the only experi-

ment of the kind. At Daganiah a similar co-operative settlement is at work, with similar colonizing aims. In contradistinction to these laborers' co-operative settlements other forms of laborers' co-operative societies have in recent years begun to develop more or less spontaneously in Palestine, which also have colonizing aims, as, e. g., in the case of the Co-operative Tenants' Societies of Huldah and Kastinie. On the other hand, the Laborers' Co-operative Plantation Societies (as at Gan Schmuel) and the Co-operative Occupation Societies (at Kinnereth, Kfar Uriah, etc.), in the form of groups which undertake to carry out certain works by agreement, have no direct colonizing aims in their program, but merely the provision of employment for their members under the most favorable conditions, and in the best possible organized form.

Like every other form of settlement, the co-operative settlement contains within itself the possibility of development into a future colony-community. Hence the proper points of view must be borne in mind in working out plans for co-operative settlements, too.

There is one particularly important factor that must be kept in sight. Jewish colonization must, be perhaps more than any other, a colonization of families, so that it may possess sufficient stability and contain within itself all the conditions requisite for the development of agriculture, which demands the co-operation of all the able-bodied members of the family. Just as Jewish emigration bears the specific character of an emigration of families, so, on the other hand, Jewish colonization must display the qualities of a colonization of families, if it is to take firm root. The fact that in the case of the first Palestinian Colonies the young generation abandoned the families and migrated ought not to be allowed in any way to render more difficult the establishment of families in newly projected colonies.

Celibacy, which at present dominates in the co-operative settlements, must prove to be a rapidly passing phenomenon, in order that the co-operative method of settlement may secure adherents.

The co-operative settlement too will, sooner or later, have to satisfy the general requirements of a colony, just as every other colony. It must contain about the same population as every other colony, in order that it may not have too great difficulties in regard to its intellectual requirements. The area that is at its disposal from the beginning must likewise approximate more or less to the size of a tolerably large colony.

Finally, for co-operative settlements pretty much the same plans will have to be adopted as in other methods of coloniza-

tion. The division of streets and paths upon the entire area of the settlement, the selecting of the site for the village, the distribution of the farmyards, installation of wells, etc.—all this will encounter the greatest difficulties, and involve a great deal of needless expense, if a systematic plan is not pursued from the very beginnings of the co-operative settlements. The required capital will also have to be estimated accordingly, and not merely for the needs of the very earliest period of co-operative colonies.

**The First
Beginnings of
National
Colonization.**

The forms of Jewish settlement adopted at Palestine that have hitherto been mentioned—the philanthropic, the private initiative, and the co-operative—all show one aim in common, that of Jewish agricultural colonization. But they are not based upon such communal principles as one could call national. They also follow no uniform methods, traverse at times, by mere chance, beaten paths, lack system, and possess neither maximum nor minimum programs. Jewish colonization in Palestine could be called national only if all Jewish endeavors and forces that are directed towards this goal were united by common national standpoints concerning (1) the manner of preparing the soil for Jewish colonizing purposes, (2) the attraction of Jewish labor, (3) the securing of national cultural interests, (4) and the raising of Jewish capital.

Both in regard to the problems of land policy as well as the question of Jewish agricultural labor, financial means, and cultural institutions, the individual efforts that have been displayed in the activity of the settlers and colonizers have not been built up on communal principles. The endeavors of the "Bilu," the Chovevei Zion, Baron Edmond de Rothschild, the Jewish Colonization Association, the Zionist institutions active in Palestine (Palestine Office, Palestine Land Development Co., Anglo Palestine Company), the "Achuzoth," the various labor organizations ("Poale Zion" and "Hapoel Hazair") and capitalist undertakings (such as "Agudath Netaim"), etc.—all these endeavors have Jewish agricultural aims in common but not Jewish national colonizing principles of a collective character, and no uniform methods for the realization of the various Palestinian colonization problems.

With regard to land and labor questions, fundamental national points of view were first set up through the adoption of the principles of the Jewish National Fund relating thereto. But the methods of a national colonization that had to be followed were not yet provided in that way. The national unification and organization of all forces with a view to the national appraisalment of all factors of colonization

—land, labor, financial means, and cultural institutions—have yet to be created.

The fundamental principle of the National Fund to acquire land as the inalienable property of the Jewish people, can be regarded as the basis of a national economic land policy. In logical agreement with this principle, the National Fund has adopted the method of hereditary tenure.

The far-reaching significance of hereditary tenure for facilitating the Jewish settlement of the country has, however, not yet been recognized in Palestine, and only in very few cases so far has the National Fund been called upon to supply land for direct colonizing purposes. It is to be assumed that sooner or later it will be recognized more and more that the National Fund can provide land under favorable conditions not only for laborers' farms, for urban settlements, and for institutions of communal utility, but above all for the establishment of new colonies.

Wherever a far-seeing policy of colonization is practiced, an endeavor is made to enable the new settler not to have to contribute any money from his own savings, or to contribute as little as possible for securing the land, in order that he might have as much as possible of his funds left over for the buildings, the working capital, and the maintenance of the family during the early period. An endeavor is made to facilitate the rise of the settler to economic independence by the payment of a low rent for the land, or even by the complete surrender of interest upon the land value. In Canada and Australia, in England, Germany and Russia, different methods have been found for this object, such as the gratuitous grant of land by the state, the formation of rented estates, or the grant of land upon the basis of favorable conditions of hereditary tenure.

In accordance with our conditions the National Fund has, in this connection, selected the most suitable method, that of hereditary tenure,* as the creation of rented estates, or the free grant of land to our settlers for colonizing purposes cannot come into consideration.

A further requisite condition of national colonizing work consists of the work of the settlers themselves. The principle that holds good for all countries, not merely for Palestine, that it is not the owners of the soil but its cultivators who nationalize a country, had logically to be carried out since the first practical steps taken by the Zionist Organization in Palestine. The farms established by the National

* More precise details of the system of hereditary tenure are contained in the periodical, *Erez Israel*, for September, 1916, issued at The Hague by the Head Office of the Jewish National Fund.

Fund find the justification of their existence pre-eminently in the realization of this principle.

Individual tasks of colonization, such as the erection of workmen's dwellings, the founding of laborers' co-operative societies, and the laying-out of national plantations, have also been included within the scope of practical activity of the National Fund. The adoption of these spheres of activity, the establishment and the development of the Palestine Office, have rendered possible the execution of certain works, which may be regarded as a preparatory stage for a future national colonizing activity upon a systematic basis. But the methods of such an extensive activity have not yet been worked out. A general plan of national colonizing work as well as a uniform colonizing program for the manifold Jewish forces concerned in Palestine have still to be drawn up.

Besides the forms of settlement that have hitherto been tried in Palestine, we shall briefly discuss, for the purpose of a comparative survey, the methods of colonization that are practiced at present in other countries.

The Method of German "Home Colonization."

The essential feature of the method of home colonization in Germany consists in the buying up of huge estates and their division into small estates. Apart from the national aim—the Germanizing of Polish districts in East Prussia—the object of German colonization both in this province as well as in others is, by founding new village colonies, to amend the unfavorable distribution of landed property, especially the lack of peasant holdings, and to increase the insufficient population. For the needs of home colonization the law of the so-called "rented estates" was created in Prussia, which facilitates considerably the establishment of small farms with low rents. At a cost of several hundred millions of marks the German "Settlement Commission," up to the end of 1915, had settled 21,714 colonists' families upon a total area of 308,819 hectares. For public purposes (communal, church and school endowments, etc.) 31,117 hectares have been used. At the end of 1916 the "Settlement Commission" still had 164,000,000 marks at its disposal for its various objects.

In Germany the founding of peasant villages is at once a method and object of colonization. In the "Archiv des Deutschen Land wirtschaftsrats für 1910" the aim of colonization is set forth in clear precision and exhaustive completeness as "the creation of peasant rural communities."

The tenant of the rented estate, i. e., the settler, has to pay a permanent rent, the actual amount of which is, on the average, 3 per cent of the price of the land. One-tenth of the

rent is irredeemable, in order that the settler's estate may be preserved for the national object. The state also reserves, through the "Settlement Commission" which represents it, the right of repurchase. The remainder, i. e., 90 per cent of the rent, can at any time be redeemed by $33 \frac{3}{10}$ times the amount, whilst the state can demand the redemption only after 50 years, in instalments, by 25 times the amount.

The principal advantages of the Prussian rented estate laws for colonization consist in the demand of the small advance payment on the part of the settler, in the moderate interest on the balance of the purchase money, and the inextinguishability of the mortgages.

The activity of the "Settlement Commission" (land purchase, "intermediate management" as regards the big estates bought up, the division of the latter, the development of settlers' holdings, selection of settlers, regulations concerning communal, church and school affairs) is exemplary.

The specific characteristic of the German colonization method consists in the laying out of village colonies on the basis of exact plans which are drawn up specially for each big estate that is purchased.

In the foreground always stands the principle confirmed by experience: "Large and productive settlers' communities: large settlement plots." The backbone of a settlers' community are considered to be peasant estates of such a size as can be managed by the owner and his family without the constant employment of strangers. The average size of these "peasant holdings" amounts to about 15 hectares. If the conditions of the soil and the market conditions are favorable the size is smaller, even down to 10 hectares; in the case of inferior soil and an unfavorable market it is larger, even up to 20 hectares. Peasant farms with an area of about five hectares have, in general, proved to be rather unfavorable in the districts of home colonization in Germany. They possess an economic justification only where, in the vicinity of large towns, the cultivation of vegetables or other garden products is assured; otherwise such an area does not suffice for the labor-power of a family and the livelihood of a peasant farmer. The establishment of agricultural farms of small area in moderate number justifies itself as a transitional stage for the ambitious farmer of small means.

The preliminary cartographic labor, the surveying and other technical investigations made regarding every plot destined to partition, is always followed in Germany by the drafting of a general colony plan for the village to be built up. In the first place, the greatest attention is devoted to the position of the area in regard to roads and economic possibilities, i. e., a very exact examination is made as to whether the plot

can be reached by a good road from the nearest center of traffic, and also how far the nearest market (or town) is situated for certain products, e. g., milk and vegetables. It is also ascertained what the extent of employment will be for laborers to be settled, in order to create a certain percentage of "laborers' holdings" in the new colony. In drafting the plan of settlement the following leading factors are observed: (a) The size of the farms; (b) the proper selection of the village site; (c) the division of roads; (d) the distribution of kinds of culture; (e) the erection of school and church, communal house, premises for co-operative institutions, etc. From the very first moment of the establishment of the colony the greatest importance is laid upon the creation of the new community and upon the development of public institutions that will subserve the social and economic system of the community. The endowing of the colony with communal property, especially in land, is regarded especially of late as a cardinal condition in the laying out of every new village.

The carrying out of colonization in the narrower sense, namely, the development of colonies, takes place through the Settlement Commission. After the drafting of the general plan of distribution of the individual colony, its functions comprise: The construction of a carefully designed network of roads and of the common promenades, measures for supplying capital, the execution of the village plan and the building of the farms, the settlement of the colonists, as well as measures for the intellectual requirements of the newly created village colony.

We thus see that the German method regards as the center of colonization the founding of villages, of colonies, in which a vigorous communal life should develop as soon as possible. This method is quite opposed to the creation of single and scattered small estates, and the purchased plots are administered upon the scale of a big farm merely in the interval until the individual holding are parcelled out and handed over to the settlers (the so-called "intermediate administration").

**The Method of
Colonization
in Denmark.**

The latest particulars about colonization in the Scandinavian countries are exceedingly interesting. Very precise methods are employed there, which aim directly at the desired end, and the fruitful results of the method are clearly discernible.

Since the year 1899 a considerable activity has taken place in Denmark in the sphere of settling farm laborers, industrial workers, and followers of other vocations. In the years 1904 and 1909 suitable laws were drafted for this purpose, with stronger measures and a larger state expenditure each time.

Encouraged by the good results of colonization, the creation of independent small settlers is continued in ever-increasing progression. The circle of applicants is constantly growing larger, and the state is constantly providing larger funds for this purpose.

The direction of the entire colonization movement is centralized; on the other hand, the colonizing work proper is decentralized as much as possible.

The granting of loans voted by the state for laying out small farms takes place in Denmark through the agency of local commissions which have to look after the establishment of small farms. Upon their recommendation the applicants receive the state loan, which is free from amortization in the first five years, and is subject to an interest of only 3 per cent. Then, in the course of a certain period, only 40 per cent of the loan is redeemed with 1 per cent, and after that the balance of 60 per cent is also paid off with 1 per cent.

Just think of the favorable conditions that have been set up for colonization in a country in which agriculture is carried on in a highly intensive and productive manner. May this example be appreciated in its complete significance for our conditions in Palestine.

The result of the Danish colonizing work in the course of the last 13 years is expressed in the figure of 6,745 small farms established, for which the state has granted a total credit of 31,300,000 crowns. For the first five years 2,000,000 crowns per annum were available; for the next five years 3,000,000 each; and since the year 1910 4,000,000 each.

The number of new farms has correspondingly increased from year to year. In the first three years 200 to 300 new farms were established each year, then about 500 to 700 each year.

The size of the farms fluctuates between two tons of land (somewhat more than one hectare) and 12 tons of land.

The small new farms in Denmark are carried on very intensively. They receive the benefit of a very large quantity of labor from the settlers and their families. Here, as everywhere, the small farm has proved more productive than the large farm. The decisive factor is that the small proprietors can devote incomparably more labour to their farms than the big proprietors. In Denmark it has been rightly recognized that the policy of parcelling out the land leads to the production of more bread and meat, milk and vegetables.

At the same time the newly founded little farms do not by any means practice "natural farming." On the contrary, they eagerly bring their products to the market. This fact is proved by the circumstance that 91 per cent of all new colon-

ists are members of co-operative dairies, 56 per cent of co-operative slaughter-houses, and 25 per cent of co-operative egg stores.

As for their former occupation the new Danish colonists were for the most part agricultural laborers (4,485 families out of 6,745, or 82.5 per cent). At the same time there are also among them former artisans (405 = 7.5 per cent) and members of other professions (551 = 10.1 per cent). From these figures it can be seen that in Denmark it is not peasants who are used as an element for colonization, but principally laborers, and partly also representatives of urban professions. Let us take note of this fact.

Colonization in Sweden.

In the domestic politics of Sweden the question of the advisability of creating as many small farms as possible has for centuries been a theme of discussion. But it was not until quite recently, namely, since the year 1904, that the domestic colonization of Sweden has entered upon a new and promising phase of development, which is characterized by the movement to establish as many "Egna-Hem" (own home) on the land as possible.

In the year 1904 the Swedish Parliament voted for the period 1905-1909 10,000,000 crowns, which should be lent in the form of cheap loans to "Laborers without means or persons in similar positions." The experiences obtained from the establishment of "Egna-Hem" were from the very beginning satisfactory, so that parliament, in the year 1908, decided to vote for the years 1909 to 1914 annual credits of 5,000,000 crowns for colonizing purposes.

The number of agricultural "Egna-Hem" established during the period 1905-1911 amounts in Sweden to 5,313. In the first year 268 farms were laid out, in the second 417, etc., until in the year 1911 the number had arisen to 1,001. Of the new colonists only 861 (about 16 per cent) were formerly farmers, and 1,517 (= 28.6 per cent) were formerly agricultural laborers. On the other hand, not fewer than 1,337 (= 26.3 per cent) were former industrial workers, and 1,598 (= 29.1 per cent) farms belong to people who were formerly engaged in other occupations. We thus see here a strongly marked tendency of the change of urban artisans into rural settlers. And no other road has been chosen for this in Sweden than that of the direct settlement of families, which, by virtue of their composition and their endeavors, appear suited for it.

Loans to settlers are granted to the extent of five-sixths of the value of the new farms. The interest amounts to 3.1 per cent, but the loan is divided into the equal parts, of which one remains in its entirety, whilst the other is liquidated. The amortization is comparatively high, 2.4 per cent. Owing to

this high rate of repayment the loan is wiped off in 26 years. It is contemplated to combine the loan with a life insurance.

Colonization in Norway.

In Norway domestic colonization is exclusively concerned with the establishment for agricultural laborers of homesteads provided with half a hectare of cultivated or arable land. The loans granted for this purpose by the state are free from repayment in the first five years, and are then liquidated at 3.6 per cent in 42 years. At present 1,500 to 2,000 rural laborers' homesteads are set up every year in Norway.

This very considerable activity was rendered possible by a law of 1903, by which a "Laborers' Holdings and Building Bank" was founded, which lends money at low interest to village communities, so that these may be able to build laborers' homes on easy terms.

During the years 1903-1913 the sum of 31,800,000 crowns was spent upon this object. Thanks to this assistance, 13,150 rural laborers' homes were called into existence.

In Norway, in contrast to Sweden and Denmark, the policy of laying out quite small agricultural holdings was maintained, because there was a considerable demand for such holdings on the part of people who could supplement the yield of a small farm with the income from other occupations, such as fishing, forestry, etc.

As for the relation of the settlers to the land allotted to them, they are in all three Scandinavian countries settled from the very outset as proprietors. Only in Sweden, where colonists are settled upon government plots, has the relation of tenant been established between them and the state until the complete repayment of the loan. The difference between such people and other colonists is not great. The state wanted to exercise more control over the settlers upon its demesnes, and to restrict any possible land speculation by establishing the temporary relationship of landlord and tenant. It is in Norway that the question whether the colonists should be established as permanent tenants or proprietors has been discussed most vigorously. But until now the status of proprietor has been maintained there too.

In all three Scandinavian countries the incontrovertible experience has been gained, that the small farms that have been created have proved a complete economic success. In these countries it is realized more than anywhere else, that in recent times the economic conditions in agriculture have developed in favor of the small farm. The small agricultural farms are rightly recognized as the most productive and profitable form of undertaking for the general community, and to its development, espe-

cially in Denmark, is ascribed the flourishing state of industry and trade.

Since the beginning of the modern colonizing activity in these countries in the year 1900, altogether 25,000 families, or about 125,000 souls, have been settled on the land. Every year somewhat above 3,000 families of 15,000 souls have been secured there for the flat land. The soil, upon which these settlers dwell, produces to-day, according to the very exact investigations that have been made, much more cattle and vegetables in particular and feeds far more persons than before. Inquiries into the position of colonists in Denmark have revealed a very rapid and considerable advance in production. In all three countries the facts have shown that the advancement of farm laborers and members of other occupations without means to the class of farmers can be carried out most speedily and most easily by means of direct settlement, with the aid of loans on favorable terms.

Colonization in England.

In England the most recent efforts for the extension of small holdings is very intimately bound up with the idea of the establishment of compact colonies, which should consist of a definite minimum number of family undertakings. There is at present dissatisfaction with the results of the small Holdings Acts of 1890, upon the basis of which until now 12,584 individual and scattered small farms have been created, in Scotland and Wales, upon a total area of 178,911 acres. It is now proposed, in connection with the need of providing for retired soldiers, not to create any more single farms, but compact colonies. The Departmental Committee on land settlement for sailors and soldiers, which was appointed in 1915, has, as the result of a thorough investigation, recognized this method as the only right one. As an extremely essential factor in facilitating the creation of colonies, the Committee has recommended the principle that the land should be given to the settlers on terms of hereditary lease. The Committee has also worked out a model estimate for the laying out of a colony upon an estate of 1,000 acres, upon which 112 small farms are to be laid out. The intellectual and social needs of the future colonies are also by no means left out of account. Suitable items have been included in the estimate for laying out new roads, for supplying the community with water, for co-operative store-rooms, for the communal conversion of various raw products into manufactured articles, for a central club-house, etc.

Thus here too the colony, consisting of a certain minimum number of families, forms the foundation of a chosen method of colonization. The promotion of colonization in the various British possessions—in Canada, Australia and New Zealand—rests upon the same principles of the creation of single homesteads and the combination of a certain number of these, as soon as is practicable, into colony communities.

As regards Ireland a systematic policy of colonization began with the Purchase of Land Act of 1885, which provided £5,000,000 in order to advance the Irish tenants the full purchase price, which was to be redeemed at 4 per cent interest. The Irish Land Act of 1903 rendered possible the acceleration of the work of colonization upon an extensive scale. By means of further Acts, especially of 1904, the Government was empowered to acquire rural estates itself and, after carrying out the necessary intermediate labors, to divide them up and sell them to settlers. The price is determined by the rent previously paid, but with a considerable deduction in favor of the settler. On the other hand, the State grants the vendors from its funds a premium of 12 per cent. The settler pays an interest of $2\frac{3}{4}$ per cent on the Government advance and liquidates it at $\frac{1}{2}$ per cent in $68\frac{1}{2}$ years. The total amount of Government loans (including £12,000,000 in premiums to the former owners) is reckoned at £100,000,000. Up to the year 1913 there had been granted upon these terms 224,643 loans! Sheridan* declares that the British Treasury has lost nothing by these operations. In the very poorest districts of Ireland, thanks to the favorable conditions of the loans, there is no diminution in the payment of rent to be recorded.

General Modern Methods of Domestic Colonization.

Can the modern domestic colonization in the various countries be of interest for Jewish colonization in Palestine? In those countries the state itself has grappled with the problems of settlement. Considerable financial means are available for the execution of the plans of colonization. The acquisition of the requisite land does not encounter too great difficulties.* Most of the settlers (but by no means all) are recruited from agricultural occupations. All these circumstances do not apply to Jewish colonization in Palestine. Besides, in the case of this country the colonists and laborers are faced by new conditions unfamiliar to them, and have to put up with the disordered conditions of a state, which, in its structure, is not yet adapted to agricultural settlement.

* Cf. article on "The overpopulated districts of Ireland and the work of the Office for overpopulated districts," by F. Sheridan ("Internationale Agrar-Oekonomische Rundschau" for February, 1915). The districts in question are regarded as over-populated, not because they have too dense a population but because, with the present distribution of property, the farmers there are unable to derive from their insufficiently large properties a secure and adequate livelihood.

* The Prussian Settlement Commission has to cope with very considerable difficulties in this respect, as under the influence of the land-purchases of the Commission itself and the Polish counteraction a continuous rapid increase of price set in. The Commission paid on the average for a hectare in the year 1886, 568 mk.; in 1890, 656 mk.; in 1900, 1,623 mk.; in 1913, 1,821 mk.

And yet the methods to be applied in Palestine too in regard to a national Jewish colonization cannot, by virtue of their very nature, be other than those of modern colonization in every other country. The very much more difficult adaption of the colonization material, the difficulties in regard to adapting the soil to economic colonization, the lack of the state power and the force of the law, the enormous task of providing the requisite big funds, etc.—all these and other circumstances cannot affect the principle that we must endeavor to approximate to the methods of colonization that have proved satisfactory everywhere else. The particular difficulties standing in our way must be surmounted by following the same paths, and by adhering to the same methods. What we lack in Government power and state organs we must seek to achieve by the unification and organization of all the forces and resources of the Jewish people which can be of service for bringing about the colonization of Palestine.

Let us now turn to the special conditions of Jewish colonization in Palestine. But before we try to ascertain the amount of capital requisite for laying out and maintaining a colony, consisting of certain number of families, let us, in regard to certain question pertaining to the establishment of individual farms, mention those factors by which we are guided in the discussion of the types of farms and schemes of colonies that are described further on. We consider it above all necessary to point to certain factors of an economic and technical nature, which are usually fairly well known, but which, as regards Palestine, are often overlooked. In the first place we must pay proper attention to the so-called "natural and economic habitat" for the various types of farms.

**The Question of
the Natural and
Economic Site of
the Individual
Types of Farms.**

The question of the complete adaptation of the forms of estate and branches of farming to be selected, to the conditions for the time being of the natural and economic site, has not been taken sufficiently into account in Palestine from one case to the next. Speaking quite generally, it was perfectly well realized that the division into various branches of agriculture depends upon the difference of soil, climate, and possibility of irrigation. But in setting up new farms one overlooked too much that the direction in which production should be aimed must also be built up on economic and purely local conditions. So far the technical questions in Palestine have not by any means been sufficiently subordinated to the economic ones.

Owing to the very large multiplicity of conditions in Palestine of climate—caused especially by the differences in the vertical height of the soil above the level of the sea—of soil, of irrigation possibilities, the demand for particular kinds of production

is based, it goes without saying, much less upon the free choice of the founder of the single farm than upon the immutable natural conditions of agricultural production. This was from the very beginning generally understood and clear. On the other hand, one paid much too little attention in Palestine to such exceedingly important factors in the selection of kinds of production as the proximity of centres of consumption, the delivery of the products from the place of origin to the nearest market, etc.

This inadequate appreciation of the transport and market possibilities from time to time very seriously affects the profits of the farm, and this drawback continues longer when the farms are modelled upon plans that possess little elasticity and adaptability to changing economic conditions.

For example, one must be careful in districts that are capable of a more or less rapid economic development, thanks to improvements of transport and general ameliorations that are easily carried out, and of a denser development, not to concentrate upon the prosecution of such commodities as are suitable in other regions, where difficulties of transport for perishable commodities will presumably continue for a long time to come.

On the other hand, considerable losses in colonizing energy, money and time, will be inevitable if, for example, too intensive forms of farming are introduced into conditions utterly unprepared for them.

The more or less correct choice of the kinds of culture, branches of farming, and types of estate, that are most suitable for each individual enterprise, is hampered by the necessity of permitting a certain period of adaptation to precede the colonizing work proper. Apart from the fact that, especially in Palestine, between the moment of the formal completion of purchase and that of regular colonizing work there must be a period for securing boundaries and confirming the acquisition of land by the actual beginning of cultivation—apart from this very first phase of occupation, various indispensable measures of preparation must usually be taken before regular colonization is possible.

The settlement proper must be preceded, according to the natural and economic conditions of the place from time to time, and in accordance with the kinds of farms projected, by important technical improvements, such as irrigation, drying road-construction, etc. In the case of many places the soil, before it can be cultivated by new settlers, must be cleared at least to a certain extent of the stones found on the surface or of deep-rooted weeds and shrubs. In very numerous cases the land, which has already been cultivated, and which has been exhausted and plundered by irrational and incessant culture, must attain a tolerable minimum degree of production, even before the settlement of the new farmers, by the application of suitable improve-

ments and methods of preparing the soil or by considerable manuring. The clearing and placing of the land under cultivation, which correspond to the French terms of "défrichement" and "mise en culture," must be extended in Palestine not only to virgin soil, but very often also to soil that has already been cultivated.

Sometimes the plots that have been prepared for settlement, cleared, made fit for cultivation, and adapted, are designated—though not exhaustively—as "occupied" territories. But this expression, which does not quite correspond to the connotation, designates pretty clearly the initial phase of all colonizing activity. We shall, therefore, apply it also to such a preparation of the holdings of future settlers, which extends not only to the occupation proper—taking possession and hold of the land ("Kibbush haadamah," as it is called in Palestine)—but also to certain preparatory stages of colonization.

It is in this conventional sense that we shall continue to use the expression "occupied territory" in discussing the various types of farms. And where we do not use this term in outlining different kinds of colonies, we nevertheless always premise that all the local conditions of the farms in question correspond, at the time of settlement, to this conception in its widened sense as here given.*

Occupation and Interim Administration.

The adaptation of purchased plots for settlement purposes comprises a series of preparatory labors, which in Germany, in the case of domestic colonization, are designated "interim administration," and in England, in the case of Irish colonization, are termed "interim labours" exactly in the same sense. The object of these interim labors is to alleviate, to curtail, and to cheapen as much as possible for the future settlers, the enormously great difficulties of the first so-called years of occupation. The better, the more carefully, and the more comprehensively the preparatory labors are carried out in technical respects, and the more they are justified financially, the better are the prospects of the colonist not to bleed in the first arduous years of settlement, not to squander his labor and his money, and not to pay altogether too dearly for the indispensable experience.

The adaptation and interim labors of a technical and agricultural character, which must always precede the settlement proper, are undertaken in different countries partly by companies and partly by private enterprises. In Germany it is the Settlement Commission which, through its interim administration and tech-

* The importance of the occupation phase of colonization is brought out particularly clearly in Nehemia de Lieme's "Über die Palästina-Arbeit" (*Erez Israel*, The Hague, Sept., 1916).

nical service, carries out the preparatory labors to a certain degree. The British Government adopts a similar attitude towards the preparation of settlements in Ireland. In Denmark there is a special company, richly subventioned by the state, which carries out the work of bringing waste lands under cultivation and adapting them for settlement purposes.

In Holland the "Nederlandsche Heidemaat-schappij" (Dutch Company for the Clearance of Heaths) has as its main object the clearance and putting under cultivation of waste land. This company, in the two years 1914 and 1915, prepared 3,543 hectares for settlement purposes by ploughing with deep ploughs, and by undertaking drainage and irrigation, making the dunes firm and carrying out the first and second sowings of corn and fodder-plants. It has also carried out with much success all the preparatory work of settlement, including all the buildings for the settlers and laborers upon an estate of 600 hectares converted into a settlement ("Het Zeyerveld" at Drenthe). This is quite a considerable achievement for the limited area of Holland.

The necessity of similar settlement preparations exists in Palestine too, and perhaps more than elsewhere. Such a work of adaptation was undertaken to a certain extent by the Jewish Colonization Association upon the farm of Sedschera. And this task was also made the primary object of the Palestine Land Development Company which was founded by Zionists. The aim of this company, apart from land-purchases, is the parcelling out of large plots and the carrying out of preparations for future settlements.

We possess in Palestine a very promising instrument for the work of occupation and certain technical preparations in the Labourers' Co-Operative Occupation Societies, which sprang up almost spontaneously, and which, in the last few years before the war, prepared many estates, at least so far as the first stages of adaptation were concerned. It is to be expected that this kind of co-operative society will be able to undertake with success the execution of large preparatory tasks of a technical and agricultural character, which must be taken in hand to facilitate the settlement of future colonists. Such companies as the P. L. D. C., the "Achuzoth," or the various Jewish Settlement Companies likely to arise in the future, will certainly find it to their advantage to entrust certain definite works of occupation, adaptation, and amelioration, upon an agreement basis, to individual groups of laborers. The co-operative societies will be able to undertake such works as securing the boundaries of newly acquired plots, laying out roads, putting up fences, constructing drain-pipes and irrigation canals, clearing away stones, removing deeply-rooted weeds and shrubs, deep ploughing and initial sowings, etc. The co-ordination of natural and private coloniza-

tion with such co-operative occupation societies will contribute very much in the future to overcoming the initial settlement difficulties.

**Intensity of
Capital and Labor
Applied to Farming.**

There are rather vague notions in Palestine about quite a number of matters relating to farm-management. Those circles that are interested in agricultural questions in relation to Palestine know full well that in working out plans of management of new farms to be founded the error of one-sidedness, or mono-culture, must be avoided. Neither pure agriculture alone, nor exclusively plantations, for many reasons that have often been discussed already, may form the basis of colonist undertakings in Palestine.

The so-called "mixed farm" has rightly become a widespread watchword in Palestine. But in reality sufficient attention is not yet paid to the necessity of supplementing plantations by agriculture, cattle-rearing, vegetable-growing, etc. On the other hand, some devote themselves exclusively to agriculture, from which they promise themselves excessively high results in a very short time. But in any case, this demand is universally known and can be easily understood by everybody.

On the other hand, there is very seldom any accurate conception of intensity of capital and labor as applied to farm management.

From the point of view of national farming considerations, we must give the preference to such farms, conducted by intensified labor, as reckon with the use of the labor of the settler himself and the members of his family. We can then appreciate the endeavor in Palestine to develop a so-called "Yishuv oved," i. e., a settlement by Jewish labor, and then, in considering measures for promoting such a settlement of the country, we shall have a particular interest in those types of farms that can be conducted with an intensity of labor of a very high degree and with the full use of the labor-force of the settler and his family.

If from the point of view of the private farmer the possibility of a productive investment of capital is more important than that of a more extensive employment of human labor, national economic tendencies lead us mainly to expect the increase of production with the aid of the constant and not too slow growth of the quantity of labor applied to each unit of surface. For both tendencies, for that of national as well as private management, extensive farming is perfectly unjustified where the population and the need of subsistence visibly increase, as in Palestine, where land must become relatively scarce and cottage farms continually smaller, in short, where they must be used more and more carefully with a greater application of labor.

The Settler Element.

Another and exceedingly important factor of colonization must be mentioned here. Nobody will deny that a condition for successful colonization must be a class of settler as well suited for it as possible. From this point of view, apart from the settlement of Palestinian farm laborers, one of the most important problems of our colonization would be to provide such Jewish families as have already engaged somewhere in agriculture with the opportunity of settling in Palestine as colonists.

There, above all, thousands of Jewish families in the South Russian provinces (Cherson, Bessarabia, Podolia) who for the past two or three generations, have carried on corn growing, tobacco cultivation, and partly also fruit and vine growing. Owing to the impossibility, in consequence of the local conditions, of buying land for the extension of farms, a considerable number of these experienced farmers have been compelled to emigrate. On the other hand, in the Russian northwestern provinces there are thousands of excellent vegetable farmers and dairy farmers, of whom many are likewise compelled to give up their calling on account of the legal difficulties in their way. These categories will be increased after the war by fresh and similar elements from Russia, and partly also no doubt from Galicia, who will be compelled to seek refuge in emigration.

The best representatives of these agriculturists emigrated before the war to America. In the Argentine the Jewish Colonization Association sought out candidates among them for settlement in its colonies. It is very greatly to be regretted that Palestine until now has not had sufficient power of attraction for these colonists. It is above all deplorable that the tobacco planters of Bessarabia, during the last 10 to 15 years, have not gone to Palestine but to the Argentine and Brazil. The tobacco planters are accustomed to take part with all members of their family in all the labors of the farm, which extend through the whole year. The women and children carry out the most essential kinds of work in these farms. There is no need to emphasize specially how important it is that particularly in the Palestinian colonies women should toil in garden and farmyard.

Among these small farmers of Eastern Europe there is always a considerable number of these who can call a few thousand francs their own after they have sold their house and eventually their little field. They are then able to enter their new home with some means of their own, which is known not to be the case in regard to proletarianized Jews from the towns. The latter betake themselves perforce to the large centers of industry and are glad to accept any kind

of work that offers itself. On the other hand, those emigrants who have already practiced agriculture try to find an opportunity of engaging in it again.

It would be of great importance to secure this excellent colonizing material for Palestine. But in order that there should be no disappointments in this respect, certain principles must unconditionally be observed, the significance of which, in the course of the last few decades, has come into the proper light through the experiences of Jewish colonization.

For the future prosperous development of colonization in Palestine it is, in my opinion, absolutely necessary that every new colonist or at least one member of each colonist's family, even if he has practiced agriculture before somewhere, should work in Palestine for at least a couple of years as a simple farm laborer.

In future another category of would-be colonists will also have to be taken into serious consideration. This consists of the sons and sons-in-law of the present colonists. Those of them who have grown up in the colonies and have not allowed themselves to be impelled by the difficulties which they had to overcome to migrate to Europe and the overseas countries, are, so far as they have manifested a real interest in the agricultural vocation, the very element that corresponds to farmers' sons among other nations. A systematic policy of colonization will in future have to take into consideration the necessity of providing these classes with the possibility of remaining in the country. The same method will probably have to be adopted as that followed by the German colonists in South Russia, who, with the aid of the new generation, constantly created new so-called "daughter colonies." For us, who are so poor in people possessed of practical experience in agriculture, it would mean the greatest squandering of forces if we do not take measures to retain the generations grown up in the colonies, especially by providing them with the opportunity of settling in ever new colonies that arise.

New colonies could, in the first instance, be composed of the three following categories of settlers:

- (1) Of such laborers' families as have worked a long time in Palestine;
- (2) Of colonists' sons and sons-in-law who have engaged in agriculture in the country, and
- (3) Of such families as will migrate for the first time to Palestine, but of which at least one member has previously worked a long time in the country.

**Would-be Settlers
With Little or
No Means.**

In order to counteract the pernicious effects of philanthropic colonization, the principle has in recent years been adopted in those circles that are interested in Palestine, that only persons with capital can be considered as prospective colonists for Palestine. Now there is no doubt that if the colonists themselves take a material share in the risk, they provide a guarantee for the seriousness of the undertaking. But the guarantee is adequate only if new colonists, on account of their inexperience, have not to pay so much for their initial errors that their own contributions to the installation of the farm very soon melt away.

The importance of this sort of guarantee must not by any means be over-estimated. A certain amount of means of one's own and a great deal of practical experience in the country are worth much more than large sums with deficient practical experience. As a matter of fact, an intending colonist with a few thousand francs to which many thousand francs must be added to secure his establishment as a colonist, has less prospect of success if he had not previously worked in Palestine, than a laborer's family which can only call a few hundred francs its own, but which has worked sufficient time in Palestine and will thus pay very much less for experience than a new colonist.

Unfortunately the Palestinian laborer until now was only seldom able to save out of his wages. Although the Jewish laborers are paid higher than the Arabs, their wage has until now hardly sufficed for more than a very modest livelihood. The hope that was entertained at the establishment of the farms of the National Fund and the Palestine Land Development Company, that the laborers would be able to rise by means of their savings has so far not been realized, as the wages there are pretty much upon the same level as in the country generally. But should this circumstance impede the possibility of the economic rise of the laborers to independence?

The Zionist Organization, which is interested in a national settlement of Palestine, will not dare to answer this question in the negative.

**Importance of the
Practical Training
of Future Colonists.**

If the demand that the prospective colonist should possess means of his own is often insisted upon too much, we occasionally make to high demands in regard to his theoretical training, too. For example, too high hopes have been set upon agricultural schools, model farms, etc. There is still a tendency to ignore the general and decisive experience that those who have finished their studies at technical schools, not only among us Jews

but everywhere, can utilize the experience thus gained more advantageously and rapidly in all countries if they find paid positions, whether in agricultural or in other pursuits. And such persons are found in much quicker time than it takes to build up an agricultural estate. Besides, the former pupils of agricultural training schools possess insufficient knowledge of practical life, so that in their case, at any rate, work upon somebody else's farm must precede the establishment of their own.

The most successful way of disseminating absolutely necessary knowledge among the settlers of a new colony is by the methods, customary in all countries, of demonstration fields, periodical short courses upon particular branches of farming or upon certain technical questions, etc. The appointment of traveling instructors for settlement districts neither too large nor too small has everywhere proved to be the most effective measure in regard to the instruction of the adult agricultural population.

We shall confine ourselves to these brief observations in regard to the importance of practical and theoretical agricultural instruction from the colonizing point of view. Without entering upon a detailed discussion of the question of the more or less trifling importance of agricultural schools, model farms, and of farms specially established for the training of inexperienced laborers, we only wish to emphasize the fact, known from the experience of all colonizing countries, that settlers without any previous practical knowledge can acquire the requisite experience in the course of their work for other colonists, especially during the first period of the colony's development.

Agricultural instruction in schools or upon training farms is a slow process, and colonizing work cannot be dependent upon it. The technical perfection of newly-founded estates outstrips the tuition at professional schools, which can, moreover, be imparted only to individual students. On the other hand, a vigorous colonizing activity, which aims at the laying out of a considerable number of single farms and entire colonies, affords manifold and excellent opportunities for the practical acquisition of the technic of farm management.

In comparison with the too lofty estimate, often shared by us, of the training in agricultural schools and on large farms, where little can be learned that can be applied to the conditions of colonists' estates, the practical activity of laborers employed in laying out settlements has an incalculably wider practical importance. On the other hand, a well-organized agricultural experimental activity and a scientific acclimatization of plants and beasts, conducted at breeding stations, likewise possess higher value for the successful and

not too dilatory colonization of a district than agricultural training schools and special farms, which are intended as a transitional stage for inexperienced laborers who are to be trained as colonists.

If vigorous colonizing work is developed in Palestine, the task of preparation for the agricultural calling on the part of future colonists in the numerous new estates will solve itself, without any special farms having to be established, as many people unjustifiably consider to be necessary.

Now that we have set forth various details and considerations respecting the methods of colonization and certain factors that must be taken into account in connection therewith, we shall now proceed to the question of the raising of the requisite capital for the establishment of single farms and entire colonies.

Farming Plans and Estimates for Colonists' Holdings.

The establishment of most of the colonies now existing in Palestine has involved the investment of very large sums. Apart from the capital of more than 60,000,000 francs provided by Baron Edmond de Rothschild, the amounts hitherto expended by philanthropic institutions and private individuals can hardly be estimated. Besides, among the agricultural undertakings in Palestine there are quite a number of those that are to be regarded as mere embryos, and which will require very considerable expenditure after the war in order to develop into complete colonies.

Not only the domains of the National Fund but also the plantations laid out in recent years by private individuals and plantation societies, such as those at Migdal, Ruchamah, Poriah, Karkur, etc., will have to be settled upon partly by laborers' families, and partly by shareholders of the estates. Thus, in addition to the initial costs of laying out plantations, all the outlay necessary for the creation and maintenance of a colony will have to be taken into account.

In order to be able to calculate the cost of laying out and maintaining a colony, one must first work out the cost of laying out the separate farms of the colonists, which will form the colony.

The figures given further on correspond to the prices current in Palestine before the war. The figures derived from the local Palestinian conditions have been used as a basis for ascertaining the capital requisite, the rate of profit, and the possibilities of repayment of the capital invested in the colonist's holding.

The various combinations of suitable forms of farming for

the Jewish colonist can be divided into several categories, according to the rate of profit yielded per unit of surface. These categories will be distinguished from one another, in the first instance, through the size of the area necessary for each of them.

I.

Colonists' Farms upon Plots of 200-250 Dunam.

In those districts and upon those tracts of Palestine, where the natural and economic conditions, and especially the transport conditions do not permit the establishment of intensive farms, the minimum area necessary for a family must not sink below 200 to 250 dunam.

However strong our endeavor may be to increase the colonizing capacity of Palestine by making the plots as small as possible, we shall nevertheless not be able to speak of small colonists' holdings in places where the soil requires many years of occupation work and gradual improvements, where there are only scanty pastures beside slowly increasing corn harvests, and where plantations, market gardening, and poultry rearing are quite limited in extent. These latter branches of farming cannot by any means be carried on everywhere upon a considerable scale. Their development requires not so much the good will of the colonists and the colonizers, as the presence of good markets in the immediate vicinity.

If the artificial irrigation of however small an area proves possible, this circumstance will at once exercise an important effect upon the farming methods. Where such a possibility can be foreseen, intensive cultures should be undertaken upon small plots. If the Valley of the Jordan, for example, is opened up to colonization, then in addition to the irrigated cultures already prevalent in Palestine, other cultures almost still unknown in the land, such as cotton, sugar-beet, bananas, etc., will also be grown. In this case, as soon as the necessary irrigation works are carried out, perhaps a couple or at the most three hectares will suffice for a colonist's family.

On the other hand, one will have to confine oneself to a generally extensive form of farming upon the non-irrigable plots on the farther side of the Jordan Valley, as well as on the near side, if they do not lie in the vicinity of good markets and constitute heavy kinds of soil not very well suited for plantations. In very many cases, then, a plot of 20 hectares (200-250 dunam) will be necessary, which already represents a considerable reduction of the 30 hectare standard, which is usually adopted as the correct one for the agricultural colonies in Galilee.

Farming Plan.

In these types of farm about 150 dunam should be set aside as arable land. For pasturage 30 to 80 dunam should be set aside, which, in course of time, could be devoted to cultivation. For the plantation of trees about 10 dunam should be set aside, for vegetable gardening 2 to 3, for farmyard, building site and roads, 7 to 8.

As regards working animals the colonist will require two horses. He will also keep two to four milch cows and be able to rear some young cattle.

The colonist will have to derive as much as possible for his livelihood out of his farm. The land will provide him with the necessary corn, and the cattle with dairy products. The vegetable garden, however small it is, and however extensively it is cultivated and minus irrigation, will have to supply him with such a quantity of vegetables that he will not have to buy tomatoes, onions, etc., from the Arabs, as is still so frequently the case in the Jewish colonies of Palestine. The poultry-yard of a colonist of this type will be installed upon a scale not so much for the sale of eggs and poultry as for supplementing the foodstuffs of the family.

Tree nurseries ought certainly not to be neglected, as was the case in the establishment of the later colonies in Galilee. But the extension of the plantations ought not to exceed the labor capacity of the colonist and his family.

About a hectare of dry, non-irrigated plantations (olive, almond, and various fruit trees, including vines) ought to be equal to the capacity of a colonist during the first years of his installation.

Land Value of a Farm of 200-250 Dunam.

How much such a plot will cost after the war, it is at present difficult to say in regard to the various tracts of Palestine to be opened up for extensive colonization.

In these regions where, before the outbreak of war, there were considerable plots to be acquired, the cost of a hectare would be about 500 francs, if the then intended purchases had been carried out. The entire plot of such a type would thus come to about 10,000-12,500 francs.

In remotely situated regions, which will perhaps be accessible after the war, the price of land will probably be much lower, so that such a plot, let us hope, may be acquired even for 2,500 francs. But it is just in such regions that the initial labors of preparation and adaptation should be particularly dear, perhaps just as dear as the price of land or even much dearer. Let us therefore assume for such a kind of farm the average price of 50 francs per dunam, including the costs of occupation.

The general conditions in the regions where purchases of land were formerly most contemplated, e. g., in the Valley of Jezreel and also in Negeb Jehudah, will perhaps change to such an extent that much more intensive farms will be able to be introduced upon considerably smaller plots—of about ten hectares and less.

**Foundation
Capital.**

For a modest dwelling, consisting of three rooms and a kitchen, the sum of 3,000 francs will in most cases have to be expended; the stable and barn will cost at least 1,200 francs. These are very modest figures, which cannot possibly be reduced. They are actually about 20 to 30 per cent less than the amounts hitherto expended on building-capital for colonists' farms.

A well installation or a share in the expense of a water-supply laid down by the entire colony must be put down at 300-500 francs. A similar amount must be expended upon laying out a vegetable-garden and a poultry-yard. For 10 dunam non-irrigated fruit-garden, which must absolutely be laid out in the course of the first two or three years, in order that the farm should not remain one-sided, not less than 1,000 francs must be reckoned.

The expenses of various improvements must also be added to the foundation capital. If the sum necessary for bringing the land into a state of cultivation, which will be incurred during the "occupation period" in Palestine, is added to the land capital, we can, on the other hand, reckon the outlay that must be incurred for the construction of the requisite streets and roads, for fencing in the entire property or a part of it, etc., as part of the initial land improvements. Tree-nurseries must likewise be legitimately reckoned as part of the foundation capital, just like the supply of drinking-water, the laying out of a vegetable garden, and the installation of a poultry-yard. For the very first improvement (fences, roads, etc.) an average of at least 12 to 15 francs per dunam, that is, 3,000 francs for a plot, must be set down.

Thus, on the whole, there would be a foundation capital of 21,700 francs, as seen by adding up the foregoing figures:

Capital in land	12,500	francs
Capital in buildings	4,200	"
First improvements	3,000	"
Drinking-water supply	500	"
Plantation	1,000	"
Vegetable-garden and poultry-yard.	500	"

Total Foundation capital 21,700 francs

Standing Working Capital.

The "standing" working-capital—so-called in distinction to the current capital—will be composed of the outlay of 1,800 francs upon live stock (2 horses 800 francs, 2 milch-cows 800 francs, 2 calves 200 francs) of the implements (ploughs, harrows, wagons, various tools) amounting to about 900 francs, and of the first lot of seeds and manure costing 400 francs. Then must be reckoned the outlay for auxiliary labor, which, in the initial period of installation, must amount at least to 600 francs. The total standing working-capital will thus amount to 3,700 francs, viz.:

Live stock	1,800 francs
Implements	900 "
First seeds and manure	400 "
Auxiliary labor	600 "
	<hr/>
Total	3,700 francs

It is possible that within this total estimate a considerable increase may have to be made for the supply of manure at the cost of the outlay upon implements.

Considerable subsidiary expense, connected with the installation of a new farm, is necessitated by the maintenance of the colonist's family until profits are realized. This additional expense must, in the case of a farm of this type, be estimated at 1,800 francs at least, for a family of five members, until the time when the produce appears (about two years after the date of settlement).

Thus, for the capital outlay, the standing working-capital, and the cost of maintenance of the family until the first harvests, the following amounts would be necessary:

Capital outlay	21,700 francs = 80 per cent
Working capital	3,700 francs = 13.5 per cent
Subsidiary expense	1,800 francs = 6.5 per cent
	<hr/>
Total	27,200 francs = 100 per cent

Expressed in percentages, the amount necessary for the land capital will be 45 per cent of the total investment, for the buildings 15 per cent, for the occupation and improvements (including garden walks) 20 per cent, for working capital 15 per cent, for family maintenance until the first harvest 5 per cent.

Mutual Relation of the Various Portions of the Invested Capital.

Every agricultural undertaking consists, besides the labor, of the capital outlay on the one hand and the working capital on the other. The individual amounts of the various capitals combine to form the total value of the farm. They thus have a definite mutual relation to one another. The amount of the individual

kinds of capital is suggested to a certain extent by the amount of purchase money or rent, as well as by the expense of new installations. The determination of the mutual relation of the various parts of the capital to one another provides, to a certain extent, a check upon the accuracy of the corresponding estimates. It also affords an approximate basis for estimating the capital requisite for a farm.

Of the total value of a farm the relative percentage, according to German and English experience, and according to climate, soil, intensity of farming, etc., formed by the foundation capital and working capital is:

	In Germany	In England
Total Foundation capital...	55 to 80 per cent	48 per cent
Working capital	45 to 20 per cent	52 per cent

On the other hand, in our estimate of the capital invested in Farm Type I we find

The total Foundation capital (including capital for occupation and improvements, as well as plantations)	80 per cent
The working capital (including subsidiary costs)	20 per cent

The relative percentage of capital invested in Lithanian farms, according to P. Ehlert (*Deutsche Landwirtschaftliche Jahrbücher*, Berlin, 1900); in East Prussian farms, according to Stieger (*Mitteilungen der Deutschen Landwirtschaftlichen Gesellschaft*, Berlin, 1901); and in Prussia, according to Aeroboe (*Journal für Landwirtschaft*, Berlin 1902), is as follows:

	According to			In Our
	Ehlert Per Cent	Stieger Per Cent	Aeroboe Per Cent	Farm-Type I Per Cent
Land (including occupation costs)	49.3	20	64.5	45
Building capital	23.7	36.4	19.5	15
Working capital	27	43.6	16	15
Initial improvement capital	—	—	—	20
Cost of family maintenance until first products	—	—	—	5
Total	100	100	100	100

The surprising fluctuations in the relation between the parts of the capital requisite for agricultural undertakings can be explained in each district by the prevailing conditions of climate, soil, intensity of cultivation, etc. There is a certain law of proportion within each farm-type of distinct farming districts, but

there cannot exist a permanent and generally valid law of proportion between the various parts of the capital, as the relations between the parts depend upon a number of local conditions, especially of an economic character.

Annual Farm Outlay. In order to calculate the net income of the farm, we must first estimate the annual expenditure and then the gross income, and by subtracting the former from the latter we arrive at the desired result. Among the farm expenditure we must not omit the labor carried out by the colonist himself. In order not to value this too high, let us put it down at 40 francs per month or 480 francs per year. For extra assistance in the season, the colonist will also have to expend at least 200 francs in wages to laborers. We wish to avoid the engagement of a regular man-servant or maid-servant, especially for the first years, when, under no circumstances, ought more or less permanent wage-labor to form part of this form of farming.

For the maintenance of the capital out of the produce of the farm itself, as well as for occasional purchases of fodder, for hoofing, and veterinary treatment, the farm will have to expend about 900 francs. For renewing the seed 100 francs must be provided, for manure at least 300 francs, for the use and repair of tools 100 francs, and for building repairs 150 francs. For taxes, in the case of an agricultural farm in Palestine, about 15 per cent of the gross produce, i. e., on 3,000 francs the sum of 450 francs must be set aside. For the very modest maintenance of a medium-sized family 900 francs are necessary. If the amount of 480 francs reckoned above as wages for the workman's family is used to defray the cost of maintenance, we must reckon at least another 420 francs as part of the yearly household expense.

The minimum annual budget for the maintenance of a colonist's family of five members (two adults and three children), assuming that the greatest portion of the subsistence will be derived from the products of the farm itself, will be composed of the following very moderate figures:

*Corn	200	francs
†Milk and milk products	150	"
Eggs	50	"
Meat and fats	100	"
Vegetables (including potatoes)	100	"
Sugar	50	"
Salt and other condiments	25	"
Beverages (tea, coffee)	25	"
‡Total	700	francs

* About 1,000 kg.

† 600 litres at 0.25 francs.

‡ Including 550-600 francs in the farm's own products.

For clothing, extraordinary expenses on the occasion of family events, etc., only the very small sum of 200 francs would be left over. The education of the children and the satisfaction of spiritual and intellectual needs would find no place at all within the limits of a yearly budget of 900 francs.

It may be emphasized most distinctly that this hypothetical budget of a colonist's family is far below the actual expenditure of colonists and laborers in Palestine. The real amount would probably be double, namely, 1,800 francs. But our figures ought not by any means to be regarded as worth aiming at, as the reduction of the household needs to a low level would stand in a gross disproportion to our colonizing objects of an economical and national character. Our figures ought rather to demonstrate the privations, for which new settlers must be prepared.

Thus, the total annual expenditure of a colonist's household, living on a very modest scale, on a farm of 200 to 250 dunam, would amount to 3,000 francs. It could consist of the following items:

Auxiliary labor	200	francs
Maintenance of cattle	900	"
Seed	100	"
Manure	300	"
Repairs and wear and tear	150	"
Taxes and dues	450	"
Maintenance of family.....	900	"

Total annual household expenditure. 3,000 francs

Gross Income.

We assume the gross income from 180 dunam of arable land, devoted to the cultivation of wheat, barley, sesame, beans, lentils, etc., to be 15 francs per dunam for the first period of settlement. It will amount to 2,700 francs for the entire area.

In the light of the already known results of similar colonists' farms in Galilee, a gross income of 15 francs per dunam should be regarded as a very high average figure. In order not to overload these observations with too much statistical material, we shall content ourselves with merely showing in the following table the agricultural produce in six colonies during the two years preceding the war. The figures, which refer to the aggregate areas under cultivation in each of the six colonies and to the total income obtained, are taken from the last annual report of the Jewish Colonization Association, published in 1914. From these totals we work out the gross income per dunam. Of the six colonies one (Ekron) is in Judaea, and the rest in Galilee.

GROSS INCOME FROM AGRICULTURE.

	Area under Cultivation in Hectares		Gross Income in Francs		Gross Income per Hectare in Francs		Gross Income per Dunam in Francs	
	1912	1913	1912	1913	1912	1913	1912	1913
Ekron	869	838	118,740	118,938	137	142	12.5	13.0
Mesha	834	809	87,213	85,584	104	106	9.5	9.5
Jamma	892	1,011	94,393	124,695	106	123	9.5	12.0
Bethshean...	244	259	25,060	36,343	102	140	9.5	13.0
Kinnereth...	75	75	11,243	10,416	149.5	139	14.0	13.0
Melhamieh..	448	352	51,503	57,383	115	163	10.5	15.0
Total ...	3,362	3,344	388,152	433,359	..	..	..	..
Average..	...	...	....	....	115	129	10.0	12.0

We see from this table that the assumed average of 15 francs gross income per dunam is 20 to 33 per cent more than the income yielded upon the considerable area of over 40,000 dunam during the two average years, such as 1912 and 1913 were. But one must not overlook the fact that the increase of harvest produce from agriculture is a rather slow process, depending upon so many economic circumstances, which can be influenced only gradually and only under certain conditions of a general and local nature. By assuming an average of 15 francs gross income per dunam, we are more inclined to overrate than to underrate the profit-yielding capacity of agriculture in Palestine, both for the present as well as for the immediate future.*

One must reckon with a pretty good class of colonist, which should proceed from the ranks of the laborers already employed in the country, in order that the harvests in the first difficult years should not remain on too low a level. Such a laborer's family will have the utmost difficulty in earning from the harvests and the other produce sufficient money to cover their needs, however scanty, as well as their taxes and dues. And only the prospect of gradually achieving more abundant harvests and increasing produce from the various subsidiary branches of farming will sustain the courage of the colonist who endeavors to maintain himself as an agriculturist upon Palestinian soil. The progress of agricul-

* According to the reports, recently received from the Jewish National Fund, of the farms at Merchaviah and Daganiah, the gross income from agriculture there is about on a par with that of the Galilean colonies. At Merchaviah agriculture has yielded about 136 francs per hectare, at Daganiah between 134 frs. (1915) and 165 fr. (1916).

tural methods and the increase of prices will not influence the profitableness of corn growing to such an extent that much better results than 15 francs per dunam could soon be realized.

The medium results, on an average of several years, for the existing agricultural colonies, can be given as 600 kilograms for wheat, 700 kilograms for barley, 350 kilograms for sesame, 1,200 kilograms for durrha, and 900 kilograms for beans. The prices before the war were about 24 francs for 100 kilograms of wheat, 22 francs for barley, 50 francs for sesame, 15 francs for durrha, and 20 francs for beans.

As regards the income from the other branches of farming, we assume for cattle raising a gross income of 600 francs (milk production, calf rearing). From the poultry yard the colonist can get eggs and fowls to the amount of at least 3 francs per week, that is, 150 francs per year. The vegetable garden must yield him vegetables of at least 100 francs in value, if we have in mind the type of colonist who wants to derive his means of subsistence as much as possible from his own plot of land.

Net Income.

The gross income, which thus amounts to 3,550 francs (agriculture 2,700 francs, cattle rearing 600 francs, poultry 150 francs, vegetable growing 100 francs), exceeds the yearly farm expenditure mentioned above only by 550 francs.

It is clear that with a net income of 550 francs, the difference between the annual gross income and the annual farming expenditure, the invested capital can only produce very low interest. The agricultural colonist in Palestine, even with the most frugal mode of life, will have the utmost difficulty in getting any interest for the first ten years upon the capital invested in his holding, however low the rate of interest may be. During this time, which really still belongs to "the occupation period," no repayments ought to be demanded from the colonist, so that he can put every possible penny into the farm.

Only after the farm will yield at least another 1,500 francs in gross income, i. e., after the gross income per dunam amounts to double of that at the beginning, and even more (about 1,200-1,500 kilograms of wheat per hectare and corresponding harvests of other field cultures), will it be possible, in the case of a farm of this type, to speak of getting interest on and paying off the invested capital. This result, owing to the continual improvements in agriculture (careful selection of seeds, extensive cultivation of vegetables, application of the dry-farming method, rational manuring, etc.), as well as on account of the constantly increasing development of the other branches of farming, will perhaps not be capable of being achieved until ten years after the foundation. If the

gross revenue amounts to 5,000 francs, then, after deducting the annual farm-expenditure, there will remain a net revenue of 2,050 francs.

The term "net revenue" always requires exact explanation, if it is not to give rise to misunderstandings. If a colonist manages and works his estate himself, then by the term "net revenue" one must understand something else than in the case of a thrifty colonist who takes no actual part in the labor. The reason of the different significance of the net revenue in practical life lies in the fact that the items of expenditure must be differently distributed according to the types of farm and according to the personality of the landlord who enjoys the net revenue as income.

Furthermore, in regard to the expression "net revenue," one must always be agreed what outlays must be reckoned as annual farm expenditure, and what must still be deducted from the net revenue. We, for example, reckon as part of the annual farm expenditure such outlays as taxes and dues, and especially the maintenance of the family. On the other hand, those amounts must be deducted that must be set aside for paying interest on liquidating the various portions of the invested capital. Very often it is only the balance remaining after these amounts are written off that is termed the real net revenue.

Liquidation and Interest of the Various Parts of the Invested Capital.

As regards the use of the land in Palestine, the question of offering it for cultivation has so far been satisfactorily solved only in the case of the settlement of cottagers, by the Jewish National Fund granting them plots upon hereditary lease. In the case of the colonists it is still a question of the future, whether to provide them with this same advantageous opportunity of not being obliged to liquidate the land capital, but only to pay interest on it, at as low a rate as possible, say 2 per cent. In thus assuming a low rate of interest for the use of the land, we particularly have in mind the idea that higher rates for paying interest on and liquidating the other portions of the invested capital should facilitate the indispensable financing of the colonists on the part of banks.

This consideration causes us, not only in the case of the cottage farm, but also in that of other types of farms, to propose only a 2 per cent interest on the land capital.

We estimate the rates for paying interest on and liquidating the remaining invested capital upon the understanding that in future long-term credits will be accessible to the colonists. The basis of credit assumed are: (1) The degree of agricultural experience acquired by the settlers in the country; (2) certain contributions in cash by the settlers for the

erection of buildings, improvements, the standing working capital, and the "subsidiary costs." If for the land capital we fix the annual interest at 2 per cent, we can hardly assume that for the remaining portions of the invested capital agrarian credits can ever be secured in Palestine at a lower rate of interest than 5 per cent.

It may be mentioned here that in Germany settlers are granted loans by the state at 4 to $4\frac{1}{2}$ per cent, and the repayments are reckoned not merely as interest, but a certain part, $3\frac{1}{2}$ to 4 per cent, is reckoned as interest, whilst the balance, $\frac{1}{2}$ or 1 per cent, is devoted to the repayment of the capital. In Germany every settler is free to choose a higher rate of repayment if he wishes. Whoever pays 1 per cent to the sinking fund, that is, pays altogether $4\frac{1}{2}$ per cent (at $3\frac{1}{2}$ per cent interest), requires 46 years for complete liquidation. Whoever chooses $1\frac{1}{2}$ per cent requires 37 years for the purpose; in the case of 2 per cent, about 30 years are necessary, in the case of $2\frac{1}{2}$ per cent about 25 years. In the case of "domestic colonization" in Germany nobody is allowed to undertake a higher rate of repayment than $2\frac{1}{2}$ per cent, so that the cottage farmer may be spared a burden which he is not sure of being able to bear.

If we assume a rate of 2 per cent as the interest on the land capital, and suppose that for all other parts of the invested capital the colonist will obtain loans at 6 per cent (including liquidation at $1\frac{1}{2}$ per cent.), then the Farm Type I, after the first decade, will have to make the following repayments:

(a) Interest on land capital, or rent (2 per cent of 12,500 francs)	250 francs
(b) From the 11th year interest and sinking of the remaining invested capital (6 per cent of 14,700 francs, in the course of $36\frac{3}{8}$ years)	882 "
(c) From the 11th year repayment of the rates of interest and sinking not covered during the initial non-income bearing period of ten years (6 per cent of 8,820 francs in the course of $36\frac{3}{8}$ years).....	529 "
Total	1,661 francs

After all these repayments, in the case of a net income of 2,050 francs the colonist would only have left for defraying the increasing needs of his family, for contributions towards the communal expenditure, for extraordinary expenses in cases of illness, etc., the sum of 389 francs and this

only after the lapse of the many years during which no net income worthy of mention may be expected.

On the whole, the prospects for a farm on a plot of 200-250 dunam in Palestine, with a predominance of agriculture, are by no means favorable. The lack of income during the inevitably difficult initial period of farming affords a bad basis of credit. The lack of interest during the first long period cannot attract any credit to this type of farm. And even if the National Fund wished to dispense with interest during the non-interest bearing period, and the colonist wanted to provide considerable capital of his own, the fact is that agriculture in Palestine, at least in the immediate future, will remain unprofitable.

This type of farm cannot attract capital at all for the present. On the other hand, it cannot be built up by labor alone, without the addition of capital—and a great deal of capital, too.

It is the enormously difficult task of agricultural science, which in order to achieve its economic aims to the full, must be in complete harmony not only with the natural, but also with the economic and other general conditions of the country, to increase the yield of Palestinian agriculture—upon unwatered soil—about threefold. Only then will the type of the agricultural colonist be justified from the financial point of view.

Is it possible for an application of perfected science and rational labor methods, adapted to the special conditions of Palestine (in regard to the extensive growth of vegetables, suitable cultivation of the soil, most carefully selected seeds, manuring, etc.) to attain within a measurable period such an increased degree of productivity of agriculture? Such a possibility is not out of the question. But a well-organized activity in agricultural experiments will have to take a very prominent part in the solution of this question.

From the national point of view we shall have to try all the more steadfastly to solve this difficult technical problem, as, in spite of the very great difficulties, which the agricultural type will in many respects always afford, and despite the comparatively extensive area that it requires, a systematic Jewish colonization of Palestine cannot well, on national grounds, dispense with it. Sooner or later it will have to adopt this type in its program on economic grounds, which are closely connected with the desirability of as large a production as possible of corn in the land itself. It will also be compelled to do this, in order that valuable portions of the land, which cannot otherwise be utilized during a certain period, may not be lost for the national estate.

But in the realization of such schemes the principle will

always have to be maintained if not creating or developing any particular type of farm until the preliminary conditions have been attained through all preparatory labors in the adaptation of the tracts concerned and the organizing of agricultural experiments.

It is solely upon this understanding that we include the agricultural farm among the series of farm types that must be considered for the future agricultural settlement of Palestine.

II.

Colonists' Farms upon Plots of 100 Dunam.

The 100 dunam type will have to display the following specific characteristics:

- (a) The cultivation of corn only to an extent corresponding to the needs of the family.
- (b) Intensive cultivation of fodder plants.
- (c) Vigorous dairy farming.
- (d) Vegeculture and poultry rearing for private use and partly for sale in the nearest markets.
- (e) Laying out of a small irrigable tree nursery or of a large non-irrigable one.

Characteristics of a Mixed Inten- sive Farm upon 100-Dunam Plot.

In drafting the working scheme for this type of farm, its proposed intensity should not reach such a high degree that the colonist family must be dependent upon permanent paid laborers. The various branches of agriculture must be so extended that the requisite labors of cultivation and tending for each of them fill up the time of the colonist and his family as evenly as possible throughout the year. No large gaps of time and, on the other hand, no inordinate accumulation of labor are very essential requisites for this type of colonist. The production of fodder and dairy farming will occupy the most prominent place.

There are hardly any examples of colonists' farms of this kind in the Palestinian Jewish Colonies. The one-sidedness hitherto observed in farming in the colonies, which concentrated either upon viticulture or upon plantations, or only upon agriculture, did not permit the realization of the more perfect colonist's farm described here. It is certain that such a farm, even with the utmost efforts, will not arise at a single stroke. The creation of more or less one-sided types of farm was much easier.

The Jewish colonist is, according to his whole nature, too much inclined to seek his salvation in a single branch of farming. His speculative spirit will only gradually assimilate the idea that in agriculture it is not always the simple calcula-

tion of the net profit from a single culture that affords the basis of success. The advantages of manifold variety on a farm and of the growth of as many products as possible on one's own estate will not very soon be fully appreciated and striven after by our farmers who originate from the town. In this respect, as in every other, those colonists who will have risen from the Palestinian labor class will show a much better preparation.

Working Plan.

Only where the conditions are such that the products of the dairy farm, the vegetable garden, and the poultry yard, can be sold at profitable prices, will the colonist have the prospect of being able very soon to defray the maintenance of his family from his medium-sized plot. He will have above all to regard the dairy farming as the foundation of his farm, with corresponding economic conditions. The production of milk, if the proper conditions are present, should become a permanent source of income of this colonist's farm, if possible, at a very early period, say in the second or third year.

Until recently one could have had doubts about the probability of cattle-rearing in Palestine. One was influenced in one's consideration by the poorly productive Arabian cattle, the defective Arabian production of fodder, and the difficulties about the transport of milk and its conversion into permanent products. Besides there was a fear of the oft-recurring cattle-plagues in the country, owing to the lack of veterinary measures, and there was also a dearth of natural meadows.

The Importance of Dairy-Farming in Palestine.

The experiences of the German colonists, who, immediately upon the establishment of their settlements, recognized the excellent opportunities for the production of fodder in Palestine, have also induced Jewish farms for some years to lay more weight than hitherto upon the cultivation of fodder-plants and upon a rational system of cattle-raising. But an unjustified timidity has been shown in this sphere, and wherever, after much hesitation, it was decided to introduce dairy-farming, this was carried out for the most part upon an inadequate scale.

The results of the first measures taken in Jewish farms are very encouraging, especially in regard to the production of fodder. In this respect the soil and climate conditions of Palestine already permit of such abundant produce per unit of area as cannot yet be achieved by corn-growing after a very long period of rational cultivation. The rich variety of species of fodder plants to be grown is extremely favorable for the profitability of cattle-raising in the Palestinian plains. The leguminous species (lucerine, clover, vetches, lupines, etc.) so important for the constant improvement and enrichment of the soil can be

grown with the greatest success. But a number of other fodder-plants have also proved excellent for the conditions, e. g., fodder-turnips and fodder-pumpkins. Many other fodder plants grown in similar climatic conditions for cattle provender can be introduced. There are splendid prospects in Palestine for the culture of the soya bean, which is not only of great advantage for the rotation of crops but also supplies abundant nourishment for man and beast.

The dearth of natural meadows, both in the case of the German colonies as well in the case of the first experiments made in a few Jewish farms (Benshemen, Ekron, Artuf, etc.), has not resulted in any diminution of the yield of over 2,000 litres of milk per cow a year, a result already achieved, as compared with the quantity, 600-800 litres, obtained in Arab farms. The extension of the culture of lucerne will cause dairy-farming in Palestine to obtain an undreamt-of degree of prosperity. A harvest of 10-12 tons of lucerne hay will be gathered from one hectare. A hectare of lucerne will suffice to feed at least two cows.

The fear of cattle-plagues has also proved already to be exaggerated. The appointment of veterinary surgeons, the observance of certain veterinary precautions, the organizing of cattle-insurance, etc., are measures that are not difficult to carry out in our colonies, and which, in view of the splendid conditions of the country for the culture of fodder-plants, will cause dairy-farming to become one of the most profitable branches of farming in Palestine.

Without entering here into technical details, and without discussing the increase, due to a developed system of dairy-farming, in the production of manure, which is exceedingly important for all other branches of farming, we only wish here to express the view that for a Jewish settlement of Palestine there is an incomparably shorter road to success in intensive cattle-raising than in the branches of farming hitherto undertaken, such as, viticulture, tree-nurseries, and corn-growing.

Thus, the 100 dunam farm is considered as that type of farm, which, with due regard to the local market condition, is expected to display a marked preponderance of dairy-farming. Besides, this branch of farming permits the manufacture of products intended for more distant transport. The extraordinarily large exports of butter and cheese from countries with good and bad transport conditions, such as Denmark and Holland, Siberia, Argentine, and New Zealand, justify us in the expectation that it will be possible in Palestine also to make arrangements for traffic in dairy-products in large quantities, as soon as the dairy-farms can supply more than the local needs.

Before we sketch briefly the working-plan of a colonist's farm on a plot of 100 dunam with a predominance of dairy-farming,

we should like to point out the following generally established facts.

1. Dairy-farming is one of the most suitable branches of farming for the small estates, as it demands particularly careful work, just like horticulture, which has already made great progress in our colonies.

2. Dairy-farming induces the wives and daughters of the small farmers to take an active share in the farm-work. The so-called "educational" importance of this branch of agriculture must, in our circumstances, be appreciated particularly highly.

Distribution of Cultures on a Farm of 100-Dunam.

From the points of view already considered, the following distribution of cultures in the case of a 100 dunam farm with a preponderance of cattle-rearing may be regarded as the most advisable.

For the production of corn merely to cover the needs of a family (five persons), 10 dunam will amply suffice. Not less than 60 dunam should be devoted to the cultivation of fodder. For a kitchen-garden situated near the house (perhaps with partial watering by means of a pump) 5 dunam must be allotted; for field-vegetables without watering (potatoes, pumpkins, water-melons, tomatoes, "bamije," onions, etc.) 10 dunam; for a non-irrigable tree-nursery 10 dunam; for farm-yard, poultry-rearing, building-site and roads, 5 dunam.

Foundation Capital.

The cost of the land, according to the prices prevalent before the war, should come to 60 or rather 75 francs (including "occupation costs") per dunam, if the main condition, proximity or contiguity to a large colony or a town, is not left out of account. Thus, for 100 dunam of land there must be reckoned 6,000 to 7,500 francs.

The dwelling-house will cost just as much as for the first type. As regards the subsidiary buildings, 600 francs more will have to be included in the estimate, in view of the larger stable. Thus, we must reckon altogether for this item 4,800 francs.

We must fix a larger sum for the water-supply, as this kind of farming has a much greater need of water (cattle-troughs, watering of vegetable-garden). This item will be liable to considerable fluctuations, according to the water-level in the sub-soil and according to the mode of the water-installation. But in such uniform estimates as we are setting up here, we can perhaps accept the average sum of 1,500 francs as sufficient for this item.

A "dry" tree-nursery of 10 dunam will cost 1,000 francs. For the first indispensable land ameliorations (removing the stones, extirpating deep-rooted weeds, etc.) at least 15 francs per dunam will have to be spent, that is, 1,500 francs altogether. For laying out a vegetable-garden and poultry-yard about 500 francs must be provided.

Thus, altogether 16,800 francs will be necessary as foundation capital. The various items may be recapitulated as follows:

Capital in land	7,500	francs
Capital in buildings	4,800	"
First improvements	1,500	"
Water-installation	1,500	"
Tree-nursery	1,000	"
Vegetable-garden and poultry-yard..	500	"

Total foundation capital.....16,800 francs

Standing

Working Capital.

The standing working-capital, in the case of the intensive type of farming just discussed, will be larger in relation to the foundation capital than in the case of the extensive farms based upon corn-growing.

For live-stock, in order that full scope may be given to the policy of cattle-rearing, at least 3,000 francs are necessary, viz., for one good horse 400 francs, for 4 very good milch-cows 1,600 francs, for 4 very good calves 1,000 francs. The cows and calves need not be acquired at once, but in the course of about two years, as soon as adequate quantities of forage are obtained on the farm. But the necessary sum for a dairy planned upon the basis of 8 cows should be provided from the very start, in order that the area intended for the culture of fodder-plants should be utilized to the full.

For implements 600 francs will suffice. For the first seeds and manure 200 francs will at first be necessary, for auxiliary labor during the first period of installation 300 francs.

The total standing working capital will amount to 4,100 francs, as the following recapitulation of the various items shows:

For live-stock	3,000	francs
For implements	600	"
For first seeds and manure.....	200	"
For auxiliary labor in the early period	300	"

Total 4,100 francs

If we also include the sum of 1,800 francs necessary for the maintenance of the family until the first produce appears, we arrive at the following total amounts and percentages for the installation of an intensive 100 dunam farm:

	Francs	Per Cent
Foundation capital	16,800	74.3
Standing working capital.....	4,100	18.0
"Subsidiary costs"	1,800	7.7
	22,700	100.0

These figures should be compared with the corresponding table for agricultural farms upon 200-250 dunam, in order to note the differences of the two types in regard to the distribution of expenditure on foundation and working capital.

The differences in the relation of the percentage becomes clearer when the individual items in the establishment expenditure are enumerated in detail. The percentages in the two different types are as follows:

	Farms of 200-250 Dunam, with Pre- ponderance of Corn-growing, in Percentage	Farms of 100 Dunam, with Pre- ponderance of Dairy-farming, in Percentage
Land capital	45	33
Capital in buildings	15	20
Improvements capital (with garden)	20	21
Standing working capital	15	18
Maintenance of family until first produce	5	8
	<hr/>	<hr/>
Total	100	100

Annual Farm Expenditure.

We assume that in the case of this farm too 680 francs (480 and 200 francs) will be expended on the work that is carried out by the colonist himself as well as for hired labor. For the maintenance of cattle about 2,500 francs will be necessary from one's own farm, viz., for 8 milk cows (at 200 francs), one horse (600 francs) and some young cattle (300 francs), and about 500 francs for additional forage (clover, oil-cake, hay, etc.), medicines, repairs of utensils and hoofs. There must be 100 francs for seeds, 500 francs for manure, 150 francs for wear and repairs, 600 francs for taxes and dues. For the maintenance of the family, in addition to the 480 francs in wages, at least another 420 francs will be necessary.

The total annual expenditure of the farm will amount to 5,450 francs, consisting of the following items:

Auxiliary labor	200 francs
Maintenance of cattle and of beasts of burden	3,000 "
Seeds	100 "
Manure	500 "
Repairs and wear and tear.....	150 "
Taxes and dues	600 "
Maintenance of family	900 "
	<hr/>
Total	5,450 francs

**Gross Income
and Net Income.**

The dairy-farming (provided there is a careful selection of cows which receive good forage and are well looked after) will produce from the 8 cows 4,000 francs (2,000 litres at 0.25 franc per cow). The rearing of calves can bring in 1,200 francs.

The income from the rearing of the corn-growing, in view of the possibility of intensive manuring, will amount to 30 francs per dunam (instead of the maximum gross income of 15 francs at present obtained in more extensive agricultural farms), i. e., 300 francs altogether.

The poultry yard will bring in about 400 francs.

The vegetable garden will yield about 600 francs in produce for the needs of the family and for sale. The field vegetables will bring in 670 francs ($\frac{1}{2}$ hectare of potatoes will yield 8,000 kilograms at 4 francs per 100 kilograms = 320 francs; $\frac{1}{5}$ hectare of watermelons will yield 1,000 at 0.15 franc = 150 francs; $\frac{3}{10}$ hectare of different field vegetables, onions, tomatoes, etc. = 200 francs).

The gross income of the farm, amounting in all to 7,170 francs will thus consist of the following items:

Dairy-farming and cattle-rearing	5,200	francs
Corn-growing	300	“
Vegetable-growing	1,270	“
Poultry yard	400	“
Total	7,170	francs

After deducting the annual outlay from the gross income we get the sum of 1,720 francs as the net income. As soon as the produce from the tree-nursery comes in (after about eight years) the net income will amount to about 2,000 francs. But the income of this farm in the third year, mainly owing to the early advent of income from cattle-rearing, will already be more than can be obtained in so short a time from other types of farms in Palestine. The payment of interest and the liquidation of the capital invested in the farm will thus prove quite favorable after a few years. The payment of these items, according to the same principles as in the case of Farm Type I, will be carried out much more easily:

The colonist will have to pay:

(a) Interest on land capital or rent (2 per cent of 7,500 francs)	150	francs
(b) From the fourth year interest on and liquidation on the rest of the invested capital (6 per cent of 15,200 francs in $36\frac{2}{3}$ years)	912	“
(c) From the fourth year repayment of the rate of interest and liquidation not covered during the first three years (6 per cent of 2,736 francs in the course of $36\frac{2}{3}$ years)	164	“
Total	1,226	francs

After all repayments the colonist will have about 500 francs left in the fourth year. He will probably prefer to redeem his obligations in a shorter time than is indicated here.

Small farms that are built up on a rational system of cattle rearing and the allied branches of agriculture certainly provide a shorter road to the independence of the settler than such farms as attach most importance to corn production, or are compelled to attach most importance to it on account of bad transport conditions and other reasons. This fact is pretty general and does not apply merely to Palestinian agriculture. Besides, small Jewish farmers in Russia, Argentine, and North America, have learned this fact from their own experience. It is bound to become known in Palestine too, so that there is no doubt that, wherever the conditions permit, greater emphasis will be laid upon cattle rearing and upon energetic development of small farms.

III.

Colonists' Farms with Unwatered Tree-Nurseries as Main Culture upon 60-75 Dunam Plots.

A third category of colonists' farms will consist of the type in which tree nurseries are in the foreground.

The number of plantation colonists will always, as hitherto, largely predominate in comparison with other types of colonists in Palestine, which is a plantation land *par excellence*.

But in future the greatest weight will have to be laid upon the avoidance of the one-sidedness hitherto observed in the laying-out of plantation farms. Beside a vineyard, an almond plantation, or olive grove, and even an orange grove, the colonist must undoubtedly possess a plot—no matter how small—for the growth of fodder and vegetables. Not only do the older colonies show the injurious defect of the exclusive plantation system, but even the recently established "Achuzoth" practically ignore the need of not planting the entire country with trees, so that a certain area should be left for other agricultural purposes.

In those places where artificial irrigation is impossible, the plot with a preponderance of plantations, must not fall below 60 dunam, in order that the family may live on the produce of the farm. On the contrary, it should rather be 75 dunam in area.

Of the 75 dunam two-thirds should be planted with almonds, apricots and other kinds of fruit, with olive trees or vines; but the question of the selection of species must be considered very carefully, as it forms one of the principal conditions of the material success of these cultures.

The rest of the plot will have to be reserved for the cultivation of fodder (15 dunam), vegetable garden (5 dunam), and farmyard building (5 dunam).

Foundation and Working-Capital.

This type of colonist will only have to pay 3,750 francs for the land. Land suitable for plantations (preferably "light" soils) can be bought not only at 50 francs per dunam, but also at 30 and 20 francs, and even less. The principal attention will have to be directed upon Southern Judaea, where excellent tracts will be available for plantation purposes cheap, should the general conditions permit us to undertake colonizing work there at all.

The occupation costs are smaller for tree nurseries than for field cultures, as the preparation of the soil does not require any long period. Nevertheless, we assume 50 francs per dunam here too as the average price of the land.

The initial costs of laying out 50 dunam of dry tree nurseries (upon easily worked soil in the plain) must be estimated at least at 3,500 francs. About 4,000 francs will have to be spent on a dwelling house and farm buildings, 1,500 francs on initial improvements, 500 francs on water supply (less need than in the case of Farm Type II). In order that there should be no lack of milk, vegetables, and poultry, for the family's own use, and that provision may be made for team work, 1,200 francs must be reckoned for the supply of cattle and working animals (two cows and one horse), 500 francs for the laying out of a vegetable garden and poultry yard, 200 francs for implements, and 300 francs for manure and seeds.

Thus, for this type of farm 13,750 francs will be necessary as foundation capital, as seen from the following summary:

Capital in land	3,750 francs
Capital in buildings	4,000 "
First improvements	1,500 "
Water supply	500 "
Plantation	3,500 "
Vegetable garden and poultry yard....	500 "

Total foundation capital 13,750 francs

The standing working capital of this type is much more than that of the preceding types because the cultivation of the plantations during the first year (i. e., in the course of the non-productive period) represents a considerable amount. This sum is all the more important in calculating the produce, as the plantation colonist, during the period of waiting, is only able to diminish these costs to a small extent by his own labor. At any rate we estimate this amount (apart from

whether the colonist discharges a certain amount of work himself or not) at the moderate average rate of 40 francs per dunam vineyard in the course of the first three years, and of 20 francs per dunam tree nurseries during the first six years, i. e., at 6,000 francs altogether, whether for vineyards or olive cultures (40 francs \times 50 dunam \times 3 years = 20 francs \times 50 dunam \times 6 years = 6,000 francs).

The total standing working capital will thus amount to 7,700 francs, as follows:

Live stock	1,200 francs
Implements	200 "
First seeds and manure	300 "
Cultivation of plantations during non-productive period	6,000 "
Total working capital	7,700 francs

As regards the expenditure for the maintenance of the family, this will form, until the produce of the plantation can be enjoyed, a very considerable sum, probably several thousand francs. If we reckon eight years as the period necessary for the complete productiveness of tree nurseries, the family, with a low annual budget of only 900 francs, will require the sum of 7,200 francs for the "subsidiary" expenses necessary to hold out during this period. In the laying out of vineyards a much smaller expenditure is necessary for this item. But as it is hardly likely that considerable areas will be planted with vines in Palestine in the near future, we must keep in view the other eventuality of the considerably higher costs that are necessary in the laying out of tree nurseries.

If we pay regard to this eventuality, then the cost of laying out a farm, with a preponderance of plantations, upon 75 dunam, will be represented by the following figures:

	Francs	Per cent
Foundation capital	13,750	48.0
Standing working capital	7,700	26.8
"Subsidiary" costs	7,200	25.2
Total	28,650	100.0

**Gross and Net
Income from
Viticulture and
Almond Culture.**

As regards non-irrigated plantations, the experience hitherto gained in Palestine does not afford any adequate or reliable data for calculating the costs of cultivation as well as of the income of all possible kinds of plantations in the country.

Thus, in the Jewish colonies there are many plantations that are either of too recent date, like those of olive trees, or laid

out upon too small areas, like those of apricots and other fruit trees, to be able to provide sufficient figures for such a calculation. On the other hand, there is very abundant material in regard to viticulture and almond culture, especially in regard to the former.

The costs of laying out a dunam of vineyard amount until harvest-time to about 190 francs. The expense in the first year of the plantation amounts to about 70 francs. The harvests regularly begin to appear after the fifth year. Complete fertility begins after the fifth year. The cost of working a dunam fluctuates between 20 and 25 francs. A vineyard of 50 dunam in Palestine demands the following annual expenditure:

Supplementary planting of vines	20 francs
Grafting of vines	30 "
Manuring	250 "
Pruning the vines	100 "
Sprinkling with sulphur	80 "
Threefold hoeing	120 "
Repairs of implements (plough, wagon) and cost of small tools (vine-shears, etc.).....	100 "
Baskets for collecting grapes	50 "
Harvest labor	100 "
Transport of grapes (to cellars)	50 "
Oscher and other taxes	250 "
Watchman	100 "
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Total	1,250 francs

Methods of Jewish Colonization.

If the family works itself, a certain portion of this expenditure can be saved, namely, about a fourth, or a third. Many items in the plantation expenditure refer to materials and the harvest which requires a great deal of labor at one and the same time. In any case, it must be noted that the working plantation colonist can save annually at least 300-400 francs, which is of great importance in calculating the amount of profit.

The gross produce is on the average 350 kilograms per dunam, but in the case of a careful selection of species, proper pruning and liberal manuring, it can easily be brought up to 500 kilograms. The prices obtained in recent years for Palestinian wines correspond to a medium price of 12 francs per 100 kilograms of grapes, and will probably increase to 15 francs in the near future. The gross income of a dunam vineyard can thus be estimated at 60-75 francs. If the culture of table grapes and of special sorts of grapes for the production of raisins spreads

in Palestine, the net income from viticulture will increase considerably in comparison with these figures.

As regards the culture of almonds, the costs of cultivation are practically the same as in the case of vines. In the first plantation year about 70 francs per dunam are necessary. Until complete fertility is attained (in the eighth to ninth year) a dunam of almond garden requires an expense of another 80-120 francs. The annual cost of cultivation amounts at present to about 15 francs. But greater care ought to be taken in regard to the suppression of mushroom diseases, working the soil, and manuring, for which altogether an outlay of 25 francs per dunam would be necessary. The harvest amounts on the average to 50 kilograms and can be valued at 60-75 francs (at 1.20-1.50 francs per kilogram). The prices of almonds are rising, so that the profitability of this culture affords good prospects for a further rise.

If we confine ourselves to these statistical data regarding "dry" plantations, we arrive at the result that the 50 dunam plantation can yield a gross produce of about 3,000-3,750 francs, and a net produce of 1,750 francs. The remaining area of the farm will give a gross produce of 1,500 francs (15 dunam general agriculture at 30 francs = 450 francs; 5 dunam with intensive vegetable culture at 200 francs = 1,000 francs; poultry rearing, 50 francs).

In calculating the annual farm expenditure of this Farm Type, we must fix a sum of at least 600 francs for hired labor, as even the most industrious colonist, as a rule, can cope with the work in the plantations himself only to a small extent. He will devote about 450 francs to the maintenance of cattle, 150 francs to repairs and wear and tear, 300 francs to manure, 50 francs to seed, 300 francs to taxes (Oscher, Vergho, etc.). In the case of this type too we reckon only 900 francs for the maintenance of the family, although most of the plantation colonists belong to such classes of the population as have much higher requirements. But in order to get a clearer idea of the comparison with the other types, let us assume the same amount for the family budget.

Altogether the annual expenditure will amount to 2,750 francs, viz.:

Auxiliary labor	600 francs
Maintenance of cattle	450 "
Manure	300 "
Repairs, and wear and tear.....	150 "
Seeds	50 "
Taxes	300 "
Maintenance of family	900 "
Total	<u>2,750 francs</u>

After deducting this annual expenditure from the gross income of 5,250 francs (3,750 francs gross income from the plantation and 1,500 francs from the rest of the farm) we get as the net income 2,500 francs, which can actually amount to much more—by about 500-600 francs for the entire farm—if the labor of the colonist himself and of his family reduces the hired labor to a minimum.

From the net income the colonist will have to make the following payments:

(a) Interest on land capital or rent (2 per cent of 3,750 francs)	75 francs
(b) From the ninth year interest on the liquidation of rest of invested capital (6 per cent of 24,900 francs in the course of 36 $\frac{2}{3}$ years)	1,494 “
(c) From the ninth year repayment of interest and liquidation not covered during first eight years (6 per cent of 11,952 francs).....	717 “
	<hr/>
Total	2,286 francs

After all payments the colonist would thus have only 214 francs left.

As a matter of fact, however, the profitability of this type of farm proves much greater if the work of the colonist himself—which must again be particularly emphasized here—is taken into account, both for the period until the appearance of the produce as well as during the productive period of the plantations. The colonist, if he works himself too, can, after making all payments, easily save several hundred francs every year. In case he has no need of borrowing the invested capital, and thus has no need of repaying it, he will derive an annual net income of about 2,000 francs and more.

Achuzoth Farms.

The fact that one has to wait too long for the income from the main source—the tree plantation—has given rise to the idea of the plantation companies, the so-called “Achuzoth.” The members of these companies do not combine for the purpose of settling immediately upon the plots planted by their respective society. They mean to wait until their holdings begin to yield their produce. In the meantime they remain in their present domicile and live from their present income. The Achuza movement will provide a certain class of future colonists with the possibility of holding out until they can migrate to their holdings. This movement ought to be propagated with the utmost energy as soon as orderly conditions have been re-established in Palestine. But, of course, the propaganda will have to be based upon more exact calculations than those hitherto employed.

The principles of the Achuzah movement ought altogether to be subjected to a serious revision. Every single Achuzah company ought in future to try to comply with the following conditions:

1. The funds of the company ought not to be invested entirely or for the most part in the purchase of land, but should where possible (e. g., by securing the land upon hereditary lease from the Jewish National Fund) be used for the other foundation capital and the standing working capital (buildings, plantations, inventory, etc.). The estimates ought to take into account with greater accuracy than hitherto the requirements of the individual farms, above all those of the establishment of the entire colony.

2. In working out the plans of the colony one ought to have in view the attraction of a sufficient number of Jewish laborers, to whom the Achuzah company should grant certain plots and advantageous terms for their participation in laying out the colony (suitable and adequate site for workmen's dwellings, laying out of plantations with a share for the laborers in the products or on "partial lease," contracts of different kinds with laborers' co-operative societies for laying out the colony).

3. In order to avoid absenticism, which underlies the present Achuzoth, they ought, on the one hand, to include in their program, instead of the one-sided plantations, such types of farms, the produce of which is not too long in appearing (dairy-farming, vegeculture), and, on the other hand, to send a number of their members, especially the younger ones, to take an active part in the work in Palestine, if possible, before the laying out of the colony begins.

If the Achuzoth in future will go hand in hand with the National Fund in regard to the preparation of the soil and the labor problems, if they will observe a more systematic practice in their establishment of colonies, then they will develop, both from the economic and the national point of view, into important factors of colonization. But for this purpose every Achuzoth must no longer be represented merely as a plantation company, but as company for the establishment of a really definite colony in Palestine.

IV.

Colonists' Farms with Irrigated Cultures. Upon 40 Dunam.

It is much more difficult to combine the culture of the orange-tree, which has to be watered, with other branches of agricultural production, than in the case of the types of farms already discussed. The soil that is closely adjacent to orange-groves can

usually be irrigated too, so that it is very soon likewise used for orange plantations. At least, that is how it was at most everywhere until now. There is no doubt, however, that, besides the present culture of oranges, different kinds of irrigated cultures will be carried on later in Palestine. Above all, irrigable plots will be used for every intensive vegeculture and for the growth of fodder plants and among which the lucerne will play a principal part. The combination of these three branches—irrigated fruit garden, vegeculture, and fodder culture (with dairy farming)—will produce a healthy form of farming, such as does not yet exist in the plantation colonies of Palestine. It is only in Petach-Tikvah that certain beginnings were recently made in the creation of such a type of farm.

For such a highly intensive farm, in comparison with the other types of farms, much less land is necessary. The area of about 40 dunam will suffice for the maintenance of a family. The difficulty of installing the expensive irrigation plant for such a small area is now solved by two or more colonists combining for the construction of such a plant. If some day vegeculture and dairy farming will be conducted with full seriousness in Palestine, then the type of farm under discussion will be free of that great defect which otherwise attaches to the plantation farm. There will, to a certain extent, not be such a long wait for the produce of the farm.

Estimate and Calculation of Profit

Does the small area necessary for this type also involve a corresponding small outlay for the farm to be established? By no means! If about 30 of the 40 dunam are planted with trees, and if the rest of the area is utilized for other irrigated cultures, we need an investment capital of not less than 41,300 francs, as seen from the following figures:

FOUNDATION CAPITAL.

	Francs	Per Cent
Capital in land, irrigable (40 @ 150 francs) . .	6,000	14.5
Capital in buildings	4,000	9.7
Irrigation plant (well, motor, reservoir; half-price, as calculated for two gardens.	8,000)	
Plantation of 30 dunam @ 40 francs per dunam	1,200	} 25.4
Fencing	1,000	
Laying out of vegetable garden.	300	
Total foundation capital	20,500	49.6

STANDING WORKING CAPITAL.

Live stock (2 cows).....	800	
Implements	100	
Seeds and manure	100	37.3
Cultivation of plantation until full produce (6 years @ 80 francs per dunam).....	14,400	
	15,400	
Maintenance of family until arrival of full produce (6 years)	5,400	13.1
Total investment capital	41,300	100
Gross income (30 dunam @ 250 francs, 10 dunam at least at 50 francs).....	8,000	
Annual farm expenditure (irrigation 900, hired labor 1,200, maintenance of cattle 300, manure 200, repairs 150, taxes 150, maintenance of family 900 francs*).....	3,850	
Net income	4,150	

The colonist will have to pay:

(a) Interest on the land capital or rent (2 per cent of 6,000 francs).....	120	francs
(b) From the seventh year interest on and liquidation of rest of invested capital (6 per cent of 35,300 francs in the course of 36½ years)	2,118	“
(c) From the seventh year payment of rates of interest and liquidation not covered during the first 6 years (6 per cent of 12,708 francs)	762	“
Total	3,000	francs

According to this calculation the owner of the after all payments, will have a balance of 1,150 francs every year. As a matter of fact, however, a much higher net income—three and four times as much—will be obtained, as the owners of for the most part, dispose of their own investment capital and therefore need not pay it off.

This form of estate is very much like the farms at present in vogue in the Judæan colonies. It is characterized (with some deviation in regard to preserving a certain area for vegetable gardening, and eventually dairy farming) by the need

* The family budget of the owner of is much higher. This estimate is taken just as in the case of the other types merely to carry out the comparison on the same principles.

which it shares with the present. farms for a high investment capital per unit of area (about 1,200 francs per dunam of.), by the necessity of waiting many years for the products, by the inevitable appointment of constant hired laborers, but also by a considerably higher rate of profit than in the case of all other kinds of farms hitherto in vogue in the colonies. The gross income is 200 francs and the net income 100 francs per dunam. These are results that will determine men of capital to prefer. to other kinds of farms for a long time to come.

V.

Colonists' Farms on Twenty Dunam of Irrigable Land.

But are there not conceivable intensive, irrigable small farms which could produce similar results, without the need of spending such large sums on the tree plantation, without having to wait so long for the products and to employ constant hired labor?

In time, no doubt, there will be in Palestine vegetable gardeners who, thanks to their own labor, and that of their families, will be able, out of a couple of hectares of land in the vicinity of towns and large colonies, to defray their complete maintenance a short time after the establishment of the farm.

If intensive vegetable farms arise, on which tree plantations are not laid out at all or only after a time, and then gradually with the aid of the produce of the farm, then one of the most important problems of Palestinian colonization—to colonize more cheaply than hitherto—will have been brought nearer to its solution. Such farms will be able to be established with 13,000 to 14,000 francs.

Possibilities for the Development of Vegeticulture in Palestine.

Until now the conditions for such a possibility hardly existed in Palestine. There was a lack of capable and practical vegetable gardeners necessary for this development. There was also a lack of markets.

People in Palestine often complain that so little vegetable is carried on in the colonies. These complaints are, indeed, justified. But how remedy this defect?

Success will be obtained very slowly by propaganda and instruction alone. Only when it will easily be possible to sell large quantities of vegetables at not too low prices on the spot or in the immediate vicinity will vegetable be practiced largely in the colonies. Such marketing opportunities will arise, apart from the growth of the urban population, through the establishment of factories for preserved vegetables and through organizing the export of early and late vegetables.

A great deal has already been said in Palestine about the technical preparation of fruits into preserves, but practically noth-

ing has been done in this respect. Nobody, however, has yet thought that the preparation of the most varied kinds of vegetables is an industry that could be developed much more easily than the manufacture of preserved fruits. It has also been overlooked that the natural conditions in the colonies are excellently suited for the production of large quantities of vegetables to be delivered to a factory.

There is no doubt that the culture and preparation of tomatoes, peas, beans, etc., in Palestine is capable of a magnificent development such as has been observed in the last decade in many parts of Italy. As soon as the general conditions in Palestine are favorable, the attention of people with sufficient capital and enterprise will have to be directed towards the establishment of factories for the preparation of preserved vegetables in suitable centres.

This is not the place to unfold an exact scheme for such an undertaking. But the necessary data are available, and they could, in case of need, be utilized for working out corresponding estimates and plans.

On the other hand, not the least beginning has been made in utilizing the splendid climatic conditions of Palestine for developing the production of the dearly-paid early and late vegetables, which can be transported over great distances. Now that the first great difficulties in regard to the sale of wine and oranges in Palestine have been overcome, there ought not to be any further doubt that the transport and traffic in early and late vegetables could be organized, exactly as is done in Italy and, to a certain extent, in Egypt. From Italy tomatoes, beans, cucumbers, etc., and from Egypt chiefly tomatoes and onions are annually exported to the value of many millions of francs. From Holland, where expensive glass houses must be built for early and late cultures, there were exported in the year 1914 to England, Germany, Austria, North America, and the Dutch West Indies, cucumbers to the value of 2,600,000 francs, tomatoes for 3,300,000 francs, vegetables pickled in salt for 7,600,000 francs, and vegetables preserved in tins for 2,200,000 francs. The area in Holland covered with vegetable plants is at present 22,433 hectares, as compared with a total area of 58,251 hectares that is used for various garden cultures (fruit culture, seed growing, flower onions, and vegiculture).*

If one bears in mind that the Palestinian sun saves one the trouble of building glass houses, that the warm damp winter favors very much the production of early vegetables, and the warm, for the most part equally damp late autumn the production of late vegetables, then more ought to decide upon promoting vegiculture in Palestine as soon as possible, with all the means

* See the 1914 Report of the Netherlands Ministry for Agriculture, Industry and Commerce.

tested by experience, to the extent that it deserves. We shall refrain from discussing here the methods of promotion, and merely emphasize the possibilities of preserving the vegetables, of transport across very great distances, and of the co-operative sale of the kinds of vegetables suited to the requirements of the markets.

Estimate of Costs and of Profits.

The following table shows the principal data in regard to the possible profits of vegetable farms upon 20 dunam:

FOUNDATION CAPITAL.		
	Francs	Per Cent
Capital in land (20 dunam @ 150 francs) . . .	3,000	22.0
Capital in buildings	3,200	23.5
Irrigation plant (one-fourth of total cost, as calculated for 4 contiguous vegetable gardens)	4,000	} 37.0
Fences	500	
Laying out of vegetable garden	500	
Total foundation capital	11,200	82.5
STANDING WORKING CAPITAL.		
Live stock (1 cow)	400	} 11.0
Implements	100	
First seeds and manure	800	
Hired labor in first period	200	
Total standing working capital	1,500	
Maintenance of family until appearance of produce	900	6.5
	13,600	100.0
Gross income (20 dunam @ 160 francs, after deducting costs of transport amounting to about 40 francs per dunam*)		3,200 francs
Annual farm expenditure (manure 300, maintenance of cattle 150, irrigation 300, seeds 150, wages of colonist and his family 480 francs; also for the maintenance of the family 420, repairs and wear and tear 50, taxes 150 francs) . .	2,000	“
Net income		1,200 francs

* The assumed gross income of 200 frs. per dunam for irrigated vegetable cultures must, in the light of experiences in Palestine and similar countries, be regarded as very moderate.

The vegetable grower will have to make the following payments:

(a) Interest on the land capital or rent (2 per cent of 3,000 francs).....	60 francs
(b) After the first year interest on and liquidation of the remaining invested capital (6 per cent of 10,600 francs in the course of 36 $\frac{2}{3}$ years)	604 “
Total	<u>664 francs</u>

The vegetable grower will be able to save 536 francs already after the first year.

* * *

From this estimate of the profit-yielding capacity of a small farm based upon commercial vegiculture can clearly be seen the important advantages afforded by this type of farm.

They consist:

- (1) In the use of a very small area and, hence, in the possibility of a denser population of certain parts of Palestine than in the case of other types of farms.
- (2) In the need of a much smaller investment capital than for the establishment of other types of farms.
- (3) In the possibility, after the brief period of installation, of dispensing entirely with hired laborers.
- (4) In the need of small sum for the maintenance of the family until the advent of the farm produce.
- (5) In the relatively high rate of profit, which allows the colonist, provided there are favorable terms of interest and of repayment of the invested capital, to improve his economic position much more quickly than by corn production and plantation farming.

It is thus well worth the trouble to adopt the most practical means immediately after the war for the early creation of such farms to the great advantage of the Jewish settlement of Palestine. The first successful creations will then lead to a rapid adoption of this kind of farm which is so very suitable for the plains and valleys of the Palestinian territory.

Moreover, it is not impossible that in future, besides the vegetable cultures, other one-year to two-year irrigated cultures (such as cotton and sugar cane) in Palestine will permit the development of a similar type of farm upon small holdings of about 20 dunam (at a relatively small cost of establishment, and with early enjoyment of a high rate of profit).

Workmen's Dwellings.

The question of small areas and low costs of establishment is of particular significance in solving the task of the settlement of Jewish laborers, which is very important for Palestinian conditions.

The attempts hitherto made to settle Jewish farm laborers in Palestine have led to the establishment of small settlements of "semi-colonists" (En Ganin, Bir Jacob, Nachlath Jehudah). The settlement of the Yemanite workmen belongs to the same sphere of creating laborers' settlements in connection with existing colonies that afford adequate employment. That the founding of these settlements responds to a really keen need, nobody doubts. At the same time, there is a general opinion that it is a matter for future consideration to find the most suitable solution for the problem of semi-colonist settlements, and, above all, to determine how much money is necessary for the settlement of a laborer's family, which, in addition to the amount of the wages, is obliged to derive from a small farm the remaining income necessary for a livelihood.

Holdings for Workmen's Dwellings.

Experience in Palestine has shown in the first place that, in accordance with the diversity of requirements, a considerable difference must be made between Jewish farm laborers who come from Eastern Europe and those from South Arabia. But it is already clear in regard to both groups that the mere erection of dwellings does not, as was thought originally, suffice in itself for the creation of settlements of "semi-farmers." Besides a dwelling house, every workman's household must be furnished with a suitable holding. The laborer must have the opportunity of carrying on vegetable culture in no sporting fashion, and of keeping poultry and one, or better, two cows.

If the land attached to the dwelling cannot be irrigated, then not less than 20 dunam must be assigned, in order that it may contribute at least one-fourth or one-third to the family's yearly budget. If the land can be irrigated, then about five dunam will clearly suffice. These modest figures ought not to be reduced.

Estimate of Costs and of Profits

According to the experience hitherto gained in Palestine, the dwelling house of a laborer must be put down at the minimum sum of 2,000 francs. The holding, as it must border upon a colony, will cost 750-1,000 francs (5 dunam @ 150 francs of irrigable land, or 20 dunam @ 50 francs of non-irrigable land). For a share in an irrigation plant 500 francs must be provided,

for a small tree nursery 200 francs, for fences 100 francs, for laying out the vegetable garden and poultry yard 150 francs. For live stock (two cows, poultry, 900 francs), implements (100 francs), and seeds (50 francs); altogether 1,050 francs must be estimated.

The following table contains a summary of the requisite investment capital as well as an estimate of the profits for a "semi-colonist's" farm in Palestine.

FOUNDATION CAPITAL.

	Francs	Per Cent
Capital in land.....	1,000	20
Capital in buildings.....	2,000	40
Water supply	500	} 19
Tree nursery	200	
Fences	100	
Vegetable garden and poultry yard.....	150	
Total foundation capital	3,950	79

STANDING WORKING CAPITAL.

Live stock	900	} 21
Implements	100	
First seeds	50	
Total working capital	1,050	
Total investment capital.....	5,000	100

GROSS INCOME.

Twenty dunam @ 50 francs or 5 dunam @ 200 francs	1,000
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ANNUAL FARM EXPENDITURE.

Maintenance of cattle 300 francs, seeds 50 francs, manure 100 francs, repairs and irrigation 100 francs, taxes 50 francs.....	600
Net income	400

A laborer's family which derives three-fourths of its income from wages can, by devoting 5,000 francs to the establishment of a small farm of the type just described, derive from it about a fourth or even a third towards covering its annual budget, though for the first year—and perhaps the second too—it must

make ends meet with its earnings. The distribution of the net income of 400 francs must be carried out as follows:

(a) Foundation capital rent, 2 per cent of 1,950 francs	39 francs
(b) Interest on and repayment of building capital at 4 per cent of 2,000 francs (corresponding to the present rule of the J. N. F. regarding workmen's dwellings)	80 "
(c) Interest on and repayment of remaining investment capital (6 per cent of 1,050 francs, in the course of $36\frac{2}{3}$ years)	63 "
Total	182 francs

Thus, 218 francs are left from the net income for defraying the annual budget.

In this calculation we assume that the buildings will be provided out of the Workmen's Dwellings Fund, which is affiliated to the J. N. F., and that the land will be given to the workmen, on hereditary lease, out of the general funds of the J. N. F.

If the laborer is obliged to draw half of his yearly budget out of his holding, then this must, of course, be correspondingly larger, and hence larger sums must be devoted to the establishment of the farm until the necessary amount is obtained for the installation of a complete colonist's farm.

"Semi-farms" or workmen's dwellings in the extended sense of this term cannot, owing to their very nature, be set up as independent settlements, but always only in connection with larger colonies or domains with corresponding opportunities of employment. The number of dwellings depends upon this factor and ought not to become excessive if the economic progress of the laborer is not to be made too difficult. It would also be a perverted policy and would lead to no result if one were to use the type and size of a "workmen's dwelling farm" for complete colonists' farms. This type must absolutely be supplemented by the opportunity of additional earnings in the immediate vicinity.

Comparative Valuation of Farm-Types.

In Reference to the Constituent Parts of the Capital and the Rate of Profit.

In order to be able better to appraise the individual types of farms, we shall now, on the basis of our previous calculations, compare these types with one another in regard to the constituent factors of the initial investment capital and the annual farm expenditure. The comparison is shown in Table I (in francs and per cent).

TABLE I. INVESTMENT CAPITAL.

	Land Capital.	Buildings, Capital.	First Improve- ments, Planta- tions, Water Supply, First Hired Labor.	Total Foundation on Capital.	Standing Working Capital.	Maintenance of Family Units First Products.	Total Investment Capital.
I. Farm type with preponderant corn production (200-250 dunam)	12,500	4,200	5,000	21,700	3,700	1,800	27,200
Per cent, about	45	15	20	80	15	5	100
II. Farm type with preponderant fodder and milk production (100 dunam) .	7,500	4,800	4,500	16,800	4,100	1,800	22,700
Per cent, about	33	20	21	74	20	6	100
III. Farm type with preponderant culture of tree nurseries (non-irrigated 75 dunam)	3,750	4,000	6,000	13,750	7,700	7,200	28,650
Per cent, about	13	14	21	48	27	25	100
IV. Farm type with preponderant culture of tree nurseries (non-irrigated 40 dunam)	6,000	4,000	10,500	20,500	15,400	5,400	41,300
Per cent, about	15	10	25	50	27	13	100
V. Farm type with preponderant vege- table production (irrigated 20 dunam)	3,000	3,200	5,000	11,200	1,500	900	13,600
Per cent, about	22	23	37	82	11	7	100
VI. Farm type of workmen's dwelling (20 dunam non-irrigated or 5 dunam irrigated)	1,000	2,000	950	3,950	1,050	.....	5,000
Per cent, about	20	40	19	79	21	..	100

This table permits us to classify our six farm types, in regard to the distribution of the constituent factors of the investment capital, into three categories, as follows:

(A) The Types I and II with a preponderance of corn production or with a preponderance of fodder production and dairy farming. In the case of both types the investments for the foundation capital form almost the same proportion—four-fifths or about three-fourths of the total investment capital, of which Type I has to give about one-half and Type II only one-third for the purchase of land. Otherwise the differences in the distribution of the investments in these cases are slight. In the further development of these two types, the second is calculated upon the basis of applying more labor than the first per unit of area. The farm founded upon a smaller plot will differ essentially from the first type through greater intensity of labor.

(B) The Types III and IV with a preponderance of plantation culture upon non-irrigable or irrigable land. These two types differ from the first two by virtue of a considerably smaller land capital (only about 13-15 per cent of the total investment capital), smaller investments in regard to the total foundation capital (only about one-half of the investment capital), and much higher expenditure (about one-half of the investment capital instead of one-fifth or one-fourth in the case of I and II) for the standing working capital, which includes above all the cost of cultivating the tree nurseries and the maintenance of the family until the harvest period.

Both of these types of plantation farms are distinctly characterized by a tendency towards the employment of hired labor. The labor of the plantation owner and of the members of his family does not suffice to keep the plantations in good condition.

Both types are farms with a high degree both of capital and labor, but the long duration of laying out the plantation tempts the owner to a capitalistic valuation of the intensive opportunity of labor, makes him disinclined to use his own labor, and estranges him from the idea of employing Jewish labor upon Palestinian soil. The plantation farms which are so excellently suited to the conditions of the greater part of the country, will attain their full importance from the point of view of a Jewish national settlement only when Jewish capital and Jewish labor make an alliance with one another, which is based upon a certain community of interest. It is not impossible that things will so develop, that between the enterprising founder of the plantation and the laborers cultivating his land agreements will be contracted, by virtue of which the latter will be interested in the success of their plantation work through participating in the products according to some system or other practised in other countries devoted to plantations.

(C) The Types V and VI. The farms of the vegetable grower and of the "semi-farmer," which are based exclusively upon the labor of the settler himself and of his family, have in common with the Types I and II the high proportion of the foundation capital to the other parts of the investment capital. Both of them require quite small plots, the value of which forms only about one-fifth of the investment capital, but, on the other hand, require relatively considerable investments for the buildings and the first improvements. The standing working capital is small (one-tenth or one-fifth of the investment capital). In the case of the "semi-farmer" who settles near a place where adequate employment is available, the item of expenditure for the maintenance of the family until the arrival of the first products falls away entirely.

**Comparison of
Farm-Types in
Regard to Profits.**

With regard to the profit yielding capacity of each of the farm types, we have in the first place to take note of the time of arrival of more or less full products. The preponderant corn production, which is carried on best on heavy soils and in parts where the work of occupation and the clearing of the soil take many years, shares with the plantation farms the common characteristic of the late arrival of the net produce.

As against the long wait for net produce in the case of Types I, III and IV, we have in the case of the Types II, V, and VI the great advantage of a relatively short period of waiting. What economic importance, both private and national, is to be ascribed from this point of view to these types, need not be discussed in further detail.

The yearly farm expenditure is highest on the fodder producing farm (Type II), when the fodder products are used on one's own farm and only the harvests worked up into milk and dairy products are sold. Thereupon follow in diminishing sequence the yearly expenditure for the irrigated plantation farm (IV), then for the agricultural farm (I), for farms with a preponderance of unwatered plantation (III), with a preponderance of vegeculture (V), and finally the cottage farm (VI).

The budgets for the maintenance of the settler's family included in the yearly farm expenditure are calculated, in the case of the first five types, on a very modest basis (at 900 francs per year and per family of five members). In the case of the "semi-farmer," who works his little farm mainly with the help of his wife and children, the annual cost of maintenance for the family is not taken into account.

The most important disparities in regard to the annual expenditure of the various farm types are shown in the amounts spent upon the maintenance of the cattle, as the number of cattle fed and the mode of feeding differ with each type of farm. In

the case of the agricultural type, it is usual to have six large-sized head of cattle which feed on pastures; but in the case of the dairy farm type the proposal is to have intensive stable feeding for 12 to 15 head of cattle (including the rearing of calves). In the case of other types one, two, or three head of cattle would be kept.

The following Tables II and III contain a summary (1) of the annual farm expenditure of all six types of farms, according to the principal items, and (2) of the estimated distribution of the "net income" according to the rates assumed above for the rent as well as for the repayment of the interest on the investment capital.

We have assumed for all the farm types similar rates of interest on and repayment of the different constituent factors of the invested capital. In reality there will be some considerable deviations according as the colonist supplies a large or only a very small part of the invested capital out of his own savings, and according to the conditions under which he acquires the use of the land (whether by purchase or hereditary tenure).

The repayments, in regard to each type, can be distributed unequally over the various periods of settlement. They can be rendered on a scale of ascending proportion corresponding to the early or late appearance of the products. And if, in settling up such a scale, a complete understanding of the settlers with the credit institutions has been arrived at, then the correct procedure to observe would be, first, the speedy repayment of the credits for the standing working capital, and then that of the loans for the buildings and improvements.

It would lead us too far if we enumerated the manifold combinations of methods of repayment. A brief indication of the principles that should be kept in view will suffice.

The following comparative table of profits gives a summary of the investments as well as of the gross and net income of the various farm types in absolute figures and terms of percentage.

Except in the case of the agricultural type the rate of interest on the investment capital appears quite favorable. In the case of the farm types with an intensity of capital, and especially Type IV (irrigable tree nurseries, orange groves), the gross income and the net proceeds could be estimated considerably higher, even to the extent of 16 per cent interest upon the investment capital. The mere assumption that there will be good marketing conditions in future for the products of plantation farms can involve an estimate of a much higher income for both Plantation Farm Types III and IV.

In Table IV the repayments for borrowed capital are not taken into account. The multiplicity of possible combinations in this respect is indicated in the preceding paragraphs. The conditions of granting credit to the various farm types and the cor-

TABLE II. ANNUAL FARM EXPENDITURE (IN FRANCS).

Farm—Type.	Hired Labor.	Main-tenance of Cattle.	Seeds.	Manure.	Repairs and Wear.	Irrigation.	Taxes.	Main-tenance of Family.	Total.
I. Preponderant agriculture	200	900	100	300	150	:	450	900	3,000
II. Preponderant dairy farming.....	200	3,000	100	500	150	:	600	900	5,450
III. Preponderant non-irrigated tree nursery	600	450	50	300	150	..	300	900	2,750
IV. Preponderant irrigated tree nursery.	900	300	50	300	200	900	300	900	3,850
V. Preponderant vegiculture.....	..	150	150	300	50	300	150	900	2,000
VI. Workmen's dwellings .....	..	300	50	100	100	100	50	..	600

TABLE III. GROSS AND NET INCOME (IN FRANCS).

Farm—Type.	Gross Income.	Net Income.	Rent.	Interest and Sinking Fund.	Total Repayment.	In FranCS.	Surplus After What Period.
I. Preponderant agriculture	3,550-5,050	550-2,050	250	1,411	1,661	389	After About 10 years
II. Preponderant dairy farming.....	7,170	1,720	150	1,076	1,226	494	" "
III. Preponderant non-irrigated tree nursery	5,250	2,500	75	2,211	2,286	214*	5-8
IV. Preponderant irrigated tree nursery.	8,000	4,150	120	2,880	3,000	1,150*	" "
V. Preponderant vegiculture.....	3,200	1,200	60	604	664	536	" "
VI. Workmen's dwellings	1,000	400	39	143	182	218	1-2

* If the plantation-owner works himself the surplus is much larger (cf. above the estimate of profits of the two types of farms).

TABLE IV. PROFITS (IN FRANCS AND PERCENTAGE).

Farm—Types.	Total Investment Capital.	Investment Capital, Less Land Capital.	Gross Income.	Annual Farm Expenditure.	Net Income.	Net Income, Less 2 Per Cent Rent.	Proportion of Net Income to Total Capital.		Less Rent to Total Investment Capital.	
							About	Percentage	About	Percentage
I. Preponderance of agriculture.....	27,200	15,700	3,550	3,000	550	300	2.2%	1.9%	2.2%	1.9%
II. Preponderance of dairy farming.....	22,700	15,200	7,170	5,450	1,720	1,570	7.5%	10.0%	7.5%	10.0%
III. Preponderance of non-irrigated tree nursery.....	28,650	24,900	5,250	2,750	2,500	2,325	8.7%	9.0%	8.7%	9.0%
IV. Preponderance of irrigation tree nursery.....	41,300	35,300	8,000	3,850	4,150	4,030	10.0%	11.4%	10.0%	11.4%
V. Preponderance of vegiculture.....	13,600	10,600	3,200	2,000	1,200	1,140	8.9%	10.8%	8.9%	10.8%
VI. Workmen's dwellings.....	5,000	4,000	1,000	600	400	380	8.0%	9.5%	8.0%	9.5%

responding repayments to be made will depend upon the general economic conditions of the country in the future, as well as upon the financial instruments that will be available for a Jewish settlement.

What will remain from the colonist's net income after all repayments are made will have to serve for defraying the growing requirements of the family, the commercial expenditure, and the expense for extraordinary cases of illness, etc. It should be noted, however, that from the gross income the taxes and the cost of maintenance of the family, though on a humble scale, have already been deducted, and that the family will enjoy free residence and the advantages of a healthy country life. It must also be taken into consideration that the continuous increase of practical experience on the part of the settlers, the progress of agriculture and science, and the farmer's own capital brought from the very beginning, which is not liable to interest and liquidation in cash, but which furnishes its own interest through the constantly increasing value of the farm—that these factors will react in increasing the balance of the net income left after all repayments. Moreover, the future improvement of the economic conditions of the country, of its general political and legal conditions, the inevitable reform of its taxation system, as well as the development of credit institutes, of the co-operative system, of the marketing organizations, etc., in the case of all types, will doubtless exercise a strong influence upon increasing the figure of the final results of the farm management.

The economic prospects for most of the possible farm types in Palestine are exceedingly favorable. And even the agricultural type will probably have fewer difficulties to overcome and prove less unprofitable than can be foreseen at present, as soon as the problem of effecting a considerable increase of the present products of agriculture will be solved.

C.

Estimate of the Capital Requisite for the Establishment and Maintenance of a Colony.

Upon the basis of the foregoing calculations concerning single farms, we shall now proceed to estimate the total expenditure upon an entire colony.

In dealing with this question we must keep in view the general point of view that is inseparable from a Jewish settlement of Palestine, namely, that the colonists must be enabled from the start to preserve and develop their cultural and communal institutions. The Jewish colony, whilst recuperating in body and soul through contact with Mother Earth, must form an organiza-

tion which shall facilitate the transition of the Jews to agriculture and prevent flight from the land, which is often caused not merely by economic but also by psychological factors.

Experience has shown that the Jewish colonist clings all the more firmly to the soil when his intellectual needs are gratified to a certain degree in the colony. In order that this may take place in a minimum measure, which dare not by any means be reduced, one of the principal conditions in working out the plans of colonization must, from the very beginning, not be left out of account. The number of colonists' families in any settlement must not fall below a certain minimum. Otherwise the colony will suffer greatly under the burden of general expenditure, as has hitherto been the case with most colonies of Palestine that are too small.

The general expenditure of a colony fluctuates a great deal according to the number of the families composing the colony.

We shall now discuss these communal expenses in detail. We shall find that the minimum limit of the burden per family in the small colonies has hitherto been so unusually high that it is quite incompatible with a healthy colonization.

Expenditure on Measures of Security.

Until before the war the cost of measures of security formed one of the principal items in the colonies' budgets. Every single community, no matter how small, had, upon its own initiative, without the support of any state institution to take measures not only for insuring the safety of the lives of the individual inhabitants, but also for watching the harvests on the field and the threshing floor, in the fruit and the vine garden—a procedure that has no parallel in any country outside Turkey. In the course of time it was found necessary to replace the cheap services of the Arab watchmen, to whose caprice and covetousness the colonies were often completely exposed, by Jewish watchmen. The institution of Jewish watchmen ("Hashomer"), called into existence a few years ago represented a great advance in regard to enhancing the feeling of security of the colonists. But it increased still further the already high expenditure on the safety service, so that this, shortly before the war, fluctuated between 3,000 and 30,000 francs per colony. Only in some single and unfortunately rare cases of exception, where two coterminous settlements organized their vigilance service together were certain savings made on this item.

It is hoped that in future the burden upon the individual communities, produced by the necessity of providing their own expensive service of watchmen for the estates and harvests will fall away completely or for the most part. At any rate, in laying out new settlements, the question of extending them or of combining adjacent Jewish estates, in order that there may be a

considerable reduction, per head of the population, in the necessary expenditure on the security service, will have to receive special consideration.

Expenditure on Schools.

The other indispensable main institutions of a Jewish colony are the school and the medical service. The school budgets fluctuated, according to the size of the settlements, between a few hundred francs (in tiny settlements) and over 18,000 francs (in Petach Tikvah). The smaller the number of the population and consequently of the school children too, the more expensive is the education per pupil, and despite the heavy burden upon the colony the school remains upon a comparatively low level. There is a danger that the parents, in order not to let the school education of their children fall below a certain minimum degree, would more probably send them away from a little settlement to some other place, or even go away together with them for this purpose, than they would from a big colony. The desertion of the Palestinian colonies, in the future too will largely be caused by this factor. The entire colonization of Palestine will be imperilled unless the rightful claims of the colonists in this respect receive much more adequate consideration than hitherto.

In a moderately good school in not too small a colony (with 50 to 100 colonists' families) the annual cost per pupil until now was 75 to 80 francs. If there were about 75 pupils of both sexes altogether, the annual budget of such a colonists' school (e. g., in Rehoboth amounted to 5,000-6,000 francs. In the smaller colonies with 40 pupils (like Gederah over 3,500 francs was spent upon the school. In a colony of at least a hundred families, if the requirements of the parents in regard to their children's education are to be fully satisfied, the cost will amount to 80-100 francs per child per year. A colony of this size, which must be regarded as the minimum, will, if its total population comprises 500 souls altogether, include 75-80 children (about 15 to 16 per cent) of school age. It will accordingly have to spend about 6,000 francs upon its school budget ($60 \times 100 = 80 \times 75 = 6,000$).

Expenditure on Medical Service.

The expenditure for medical service in the colonies is composed of the salaries of a doctor and veterinary surgeon and the maintenance of pharmacies. Although many a person who glances for the first time into the inner life of a colony in Palestine might almost regard the organization of medical service as in the nature of a luxury, yet the need of the colonists in future for frequent medical service and for medicines will not be susceptible of diminution. The fear of new climatic conditions, to which the first generation accustoms itself with some difficulty, and the existing neglect of certain principles of a healthy and

natural mode of life—these factors together with the unhealthy conditions that really obtain in certain districts, will make the cost of the sanitary service of each colony disproportionately high. Perhaps a change will come about in this respect too after the war, if the state conceives the general sanitary duties differently than has hitherto been the case. Besides, these expenses can be somewhat diminished if neighboring colonies combine to defray them jointly.

On the whole, however, the small colonies will be saddled in the future too with a much heavier burden in this sphere, without being able to satisfy their needs to the same extent as large colonies.

The very small colonies with not more than 20 to 30 families must usually content themselves with a veterinary surgeon, whose maintenance amounts to about 1,200 francs per annum for the colony, i. e., about 40 to 60 francs per family per annum. In the settlements with 50 and more families doctors and medicines cost 2,000-2,500 francs per annum. In settlements with 100 families and more doctors and medicines must cost 6,000 francs per annum. The average figure of 60 francs per annum and family can be regarded as covering the need of the medical service in a Palestinian colony, though one must not overlook the fact that it is only in the large colonies that the colonists are furnished with adequate medical aid.

Other Communal Expenses.

The communal budgets everywhere include (besides vigilance, school and medical aid) the expenses for the Shochet and the colony Elder (Muchtar). The maintenance of these two communal officials amounts to 900-1,500 francs, and varies little in relation to the size of the colony. More important settlements must also keep a communal secretary with an annual salary of several hundred francs. And a similar amount is spent in some colonies upon the communal ritual bath.

Synagogues in the colonies are maintained not by the community, but by individual groups of colonists.

Large colonies also possess libraries with reading rooms. But these items have so far not occupied any definite place in the communal budget.

The supply of drinking water demands a rather considerable expense in many colonies. Not a single colony dares to omit from its communal budget an annual amount, corresponding to local conditions, for the pump installation, reservoir, and water pipes, even if the individual colonists' farms are all supplied with water. As soon as a colony is laid out, the installation of the water supply should be attended to at the same time as the necessary school building. The expense is incurred only once and it should really be reckoned to the installation costs of each individual colonist. The larger the colony, the smaller will the

share of each colonist be in the cost of this and similar arrangements, which must be created sooner or later,

The Minimum Size of a Colony.

The survey of the general expenditure of a colony demonstrates, with a clarity that must be evident to every visitor of a colony, a fact that is regularly and repeatedly forgotten by colonizing organizations and communities, namely, that small settlements and estates should not be laid out if they have no prospect of being supported by already existing Jewish colonies bordering upon them. The minimum size of a settlement should be taken to be an area that can suffice for at least one hundred families. Only if this is the minimum population of a colony will the inevitable requirements of a Jewish community be satisfied without an enormous burden falling upon the individual, as was hitherto the case.

In the largest Palestinian colony, Petach Tikvah, with 933 souls, the communal tax just before the War amounted to about 260 francs per family. In the colony of Kastiniah with 109 souls it amounted to 680 francs. In this colony the general requirements of the population could only be satisfied in a primitive fashion. (Cf. Kurt Nawratzky, "Die jüdische Kolonisation Palästinas," J. Oettinger, "Materials on the Economic Conditions of the Jewish Colonies in Palestine," (Russian).

Even the most intensive form of farming conceivable is incapable of securing to the colonist such an income as would permit him to bear the high communal taxes that are inevitable in small settlements in Palestine. A communal tax of 300 francs per family is already an enormously high burden. It should not in any case be allowed to rise above this limit, if the colonies are not always to be dependent in a large measure upon external aid in regard to their cultural needs. If certain communal tasks of the colony communities (in the interest of the speedy and successful Jewish settlement of Palestine) will have to be undertaken in future too, on perfectly justified grounds, by national institutions of public utility, then a limit must be set to the expense involved by the establishment of sufficiently large settlements and the amalgamation of small settlements.

In case the funds for a large settlement cannot be raised, then every effort must be made, for the reasons already given, to combine the estates in such a manner either with an older settlement or with another new one, that all or the greatest part of the communal expenditure will be borne by not fewer than 100 families.

In view of the very high communal expenditure that is necessary, one might feel induced to regard the minimum number of a hundred families as too small, and to set up the principle that new colonies in Palestine must form much larger communities

from the very beginning. But such an absolute demand could not be maintained on account of the following considerations:

1. The establishment of the colonies with 100 families as the minimum number will already be a very great advance—in comparison with most of the present miniature settlements, consisting of 20-30 families or of 30-60 unmarried laborers.

2. For larger colonies, comprising more than 100 families from the very establishment, it is hardly likely that sufficiently extensive and adjacent areas in Palestine will be found.

3. The minimum of 100 families per colony refers merely to the initial number of the agricultural population. This nucleus will be supplemented from the beginning by workmen, artisans, teachers, medical staff, merchants (perhaps 20-50 families at once). But a hundred-family colony will very soon exercise such a power of attraction that the number of the population will at least be doubled within a few years.

4. Wherever possible colonies should be laid out with a larger initial number of families engaged in agriculture.

5. In regard to certain communal expenditure (doctors, hospitals, etc.) an effort will have to be made to unite neighboring colonies for common organization (district unions).

Summary of a Colony's General Expenditure.

The general expenditure of a colony of 100 families will probably consist of the following items:

	For 100 Families	Until Now
Measures of security	10,000 francs	3,000-30,000 francs
Schools	6,000 "	800-18,000 "
Medical aid	6,000 "	900- 5,000 "
Shochet and Muchtar	1,500 "	900- 1,500 "
Communal secretary	900 "	300- 1,200 "
Drinking water supply	4,000 "	1,000- 5,000 "
Communal bath	600 "	600- 1,200 "
Subventions to a reading room, library, etc.	1,000 "	300- 1,500 "
	30,000 francs	7,800-63,400 francs

To these amounts must be added all sorts of administrative costs of the colony, various extraordinary expenses at trials, in disputes with Arab neighbors, and in intercourse with the Turkish authorities.

In order to reduce the former enormous administrative expenditure to a minimum, the settlers, from the very moment of their combining for the object of founding a colony, must institute an autonomous communal board of administration, elected

from their own midst. In this way they will not be exposed to the management of an administrator, who, even though he has the best intentions and most efficient capacity, will incur more general expenses than an elected committee, which will discharge the administrative affairs of the colony community from the very beginning.

For a certain part of the communal expenditure the colonies themselves will have to contribute; for another part—namely for school, medical aid—subventions from national and public sources will be indispensable for a certain number of years. In order gradually to reduce this sort of subsidies, every new colony will have to create a communal income of its own. This object could be served by the laying out of communal forest plantations (perhaps with the participation of the National Fund).

Cost of Public Institutions. The cost of establishment of the various public institutions of the colony must be secured in advance. This comprises the following items of expenditure: (1) School building with school equipment and teacher's house, (2) the building of a dispensary with doctor's house, (3) construction of roads and streets, (4) communal plantations, (5) synagogues, etc.

The cost of establishment will probably vary during the first years within the following limits, according to the local conditions:

For schools, etc.	10,000-20,000	francs
Hospital, etc.	5,000-10,000	"
Synagogues	5,000-10,000	"
Road building, necessary approaches and pavements	20,000-40,000	"
Communal forest plantations (500-1,000).	25,000-50,000	"
	<hr/>	
Total	65,000-130,000	francs
Or on the average	100,000	"

The community must also provide the requisite site for each of these institutions. The following areas will be found necessary:

For school with school garden and playground, about	30	dunam
For hospital with yard and garden	10	"
For synagogues	10	"
For roads, streets and squares	100	"
For forest plantations	500-1,000	"
	<hr/>	
Total, about	650-1,150	dunam

Total Capital Requisite for the Establishment of a Colony, According to Different Schemes.

Requisite Land for a Colony.

The minimum area necessary for a colony will depend upon the possibility of settling the one or other type of colonist, according to the natural and economic conditions of the site. It must be observed, however, that certain combinations of different types can, under certain circumstances, be introduced in one and the same colony. No matter what the conditions, a certain number of workmen's dwellings can be founded in connection with every hundred farms. Furthermore, the type of the preponderant dairy farm can be combined with that of the preponderant unwatered tree nurseries, and similarly watered plantations can be combined with farms mainly developed upon irrigated vegeculture. In every combination a certain percentage of the area must be reckoned as reserve land for the sons and sons-in-law of the colonists. Wherever possible, the reserve land should form 25 per cent of the colony. But as it will be difficult in practice to reserve such a percentage, at least 10 per cent should be reserved. Communal land must also be provided for public institutions, communal forest, and communal pasture.

In accordance with the foregoing considerations we could set up the following schemes of colonies in Palestine:

FIRST SCHEME.

Eighty farms with preponderant corn cultivation and 20 workmen's dwellings.

(a) 80 x 200—250 dunam	16,000-20,000 dunam
(b) 20 x 20 dunam	400- 400 “
(c) Reserve land, 10 per cent of 16,000-20,000 dunam	1,600- 2,000 “
(d) Communal land for public institutions and communal forest	650- 1,150 “
(e) Communal pasture, 10 per cent of 16,000-20,000 dunam	1,600- 2,000 “
Total	20,250-25,550 dunam

SECOND SCHEME.

Forty farms with preponderant dairy farming, 30 with preponderant unwatered tree nurseries, 30 workmen's dwellings.

(a) 40 x 100 dunam	4,000 dunam
(b) 30 x 75 dunam	2,250 “
(c) 30 x 20 dunam	600 “
(d) Reserve land, 10 per cent of 6,250 dunam...	625 “
(e) Communal land for public institutions and communal forest	650 “
(f) Communal pasture, about 20 per cent of 6,250 dunam	1,250 “
Total	9,375 dunam

THIRD SCHEME.

Thirty farms with preponderant irrigable tree nurseries, 20 with irrigated vegeculture, 50 workmen's dwellings.

(a) 30 x 40 dunam	1,200	dunam
(b) 20 x 20 dunam	400	"
(c) 50 x 5 dunam	250	"
(d) Reserve land, 10 per cent of 1,600 dunam..	160	"
(e) Communal land for public institutions.....	240	"
(f) Communal forest, 20 per cent of 1,600 dunam	320	"
Total	2,570	dunam

For these three combinations, areas amounting (in round figures) to 20,000-25,000, 10,000 and 2,500 dunam would be necessary.

Financing Plans for Colonies.

The capital requisite for the creation of a colony will only be able in the rarest cases to be raised by the colonists themselves. And the workmen's holdings that will in future be set up in connection with every colony can certainly not be developed by the laborers' families themselves. On the contrary, even though the colonists invest considerable capital of their own, other agencies must play a part in every new colony. Just as in the past Baron Edmond de Rothschild, and then later the Jewish Colonization Association, carried out the establishment of colonies without the financial co-operation of other organizations, so in future will the establishment of new colonies have to depend, in ever-growing degree, upon the financial co-operation of the colonists, and of various national institutions and companies. One can imagine that in future the capital necessary for the formation of colonies will come from the following four sources:

1. From the contributions of the colonists.
2. From the contribution of the National Fund for the acquisition of land as well as for the communal plantations, for the erection of buildings, and the improvements of workmen's buildings.
3. From a loan granted by a Colonization Company or Agrarian Bank (perhaps a special Agrarian Fund) to be founded in Palestine for the erection of buildings, for carrying out improvements, and for providing the standing working capital. (A co-operative credit society which will have to be founded from the very beginning in every colony will have to provide the current working capital through loans from banks.)
4. From subventions granted by national cultural organizations for defraying the communal expenditure during the first five to ten years. The plantations and other communal revenue will afterwards yield the means for defraying the communal budget.

**Participation
of the Individual
Agencies in the
Investment Capital.**

The participation of the colonists in the work of founding their colony could manifest itself best in the formation of a Settlers' Company for every new colony. The contribution of each member (including the workmen's holdings, the scheme always comprises a hundred families) ought to be so calculated as to form in the various types about the following percentages of the total investment capital less the land value, i. e., of the capital represented by the buildings, improvements, and standing working capital:

Farm Type I, with preponderant corn cultivation.....	10%
Farm Type II, with preponderant dairy farming.....	20%
Farm Type III, with preponderant non-irrigable plantations	40%
Farm Type IV, with preponderant irrigable plantations	50%
Farm Type V, with preponderant irrigable vegiculture...	20%

All the farm types must have the possibility of acquiring the land upon hereditary lease from the Jewish National Fund, without liquidation of its purchase price, and upon a very low rate of interest (2 per cent) of the purchase value of the estate. As for the amounts required for the building capital, costs of improvements, and the standing working capital, the colonists ought to have the opportunity in future of obtaining them from Agrarian Banks (or special Agrarian Funds) or from Colonization Companies to the amount of 50 to 90 per cent.

The highly capitalized plantation farms of Types III and IV should, in accordance with the assumed proportionate participation in the various factors of the investment capital, be justified in claiming from future Agrarian Credit Banks, or richly capitalized Colonization Company in Palestine loans to the amount of 50 or 60 per cent of the buildings capital, of the costs of the first improvements, and of the standing working capital.

As regards the workmen's dwellings, laborers who have worked a certain minimum period in Palestine can only be asked to share in the working capital (to the extent of about 10 per cent of the entire amount), and a credit institute will have to supply the remainder of the working capital (90 per cent) by granting a loan. In the case of this type the Jewish National Fund will have to bear the total costs of the estate, of the improvements, and of the buildings—the last from the funds of the Workmen's Dwellings Fund. The laborers, for whom dwellings should be erected only in those places where employment is certain, will have to defray the maintenance of their family out of their earnings during the short time until the first products arrive. Similarly, in the case of the other farm types the settlers

will have to maintain their families out of their own means until the appearance of the first products.

In the case of each of our farm types, a further sum of 500 (Types I-V) or 50 francs for (Type VI) must be reckoned for a share in a Savings and Loan Society, which should be established at the outset.

Moreover, in the case of all types, there must be advances and subventions on the part of the National Fund for communal plantations, communal and reserve lands, as well as on the part of national cultural organizations for the public institutions of the communities and for the communal expenditure during about the first six years of the colony's existence.

The financial share in the establishment of the colony on the part of the various pioneers of colonization will be expressed, with due regard to the proposed percentage ratios, in the following absolute and relative figures (according to the Summary Tables I, II, and III below).

According to these calculations the share of the settlers in the various schemes of colonies would fluctuate between 10.3 per cent and 31.9 per cent, of the total investment capital; the share of the National Fund, between 25.6 and 46.6 per cent; of the credit institutions, between 29.8 and 33.3 per cent; and of the national cultural organizations between 9.8 and 12.7 per cent.

If we reckon up the contributions of the settlers on the one hand, and the loans of credit institutes and the advances from the National Fund and cultural organizations on the other hand, we shall find the following results for the three schemes of colonies:

	Settlers	Credit Institutes, J. N. F. and National Cultural Institutions
First Scheme	10.3% (roughly 1/10)	89.7% (roughly 9/10)
Second Scheme	26.4% (roughly 1/4)	73.6% (roughly 3/4)
Third Scheme	31.9% (roughly 1/3)	68.1% (roughly 2/3)

An understanding between the settlers of each colony and the other agencies interested in the Jewish settlement of Palestine will be necessary, in order that the total investment capital required should be available.

CAPITAL REQUISITE (IN FRANCS) FOR COLONIES OF ONE HUNDRED FAMILIES.

TABULAR SURVEY I.

Shares of the Individual Agencies (Total Figures)

FIRST SCHEME.	Land Capital and Communal Plantations.	Buildings Capital, Im- provements, Standing Working Capital.	Current Working Capital.	Family Maintenance Until First Products.	Cost of Establishment of Public Institutions.	Maintenance of Colony in First Six Years.	Total	Per Cent.
(a) Contributions of Settlers:								
(1) Of the colonists, 80 families (Farm Type I) .....	.....	103,200	40,000	144,000	.....	.....	287,200	.....
(2) Of the laborers, 20 families (Farm Type VI) .....	.....	2,100	1,000	.....	.....	.....	3,100	.....
Total .....	.....	105,300	41,000	144,000	.....	.....	290,300	10.3
(b) Contributions of the Jewish National Fund:								
(1) For 80 colonists families....	1,000,000	.....	.....	.....	.....	.....	1,000,000	.....
(2) For 20 laborers families....	20,000	59,000	.....	.....	.....	.....	79,000	.....
(3) Communal and reserve land, communal plantations.....	250,000	.....	.....	.....	.....	.....	250,000	.....
Total	1,270,000	59,000	.....	.....	.....	.....	1,329,000	46.6

CAPITAL REQUISITE (IN FRANCS) FOR COLONIES OF ONE HUNDRED FAMILIES.
TABULAR SURVEY I.

Shares of the Individual Agencies (Total Figures)

FIRST SCHEME.	Land Capital and Communal Plantations.	Buildings Capital, Im- provements, Standing Working Capital	Current Working Capital.	Family Maintenance Until First Products.	Cost of Establishment of Public Institutions.	Maintenance of Colony in First Six Years.	Total.	Per Cent.
(c) Contributions of Credit institutions:								
(1) For 80 colonist families....	.....	928,800	... ..	.....	.....	.....	928,800	...
(2) For 20 laborers families....	.....	18,900	.....	.....	.....	.....	18,900	...
Total .....	.....	947,700	.....	.....	.....	.....	947,700	33.3
(d) Contributions of national cultural institutions:								
For public institutions and com- munal expenditure .....	.....	.....	.....	.....	100,000	180,000	280,000	9.8
Total	1,270,000	1,112,000	41,000	144,000	100,000	180,000	2,847,000	100.0

CAPITAL REQUISITE (IN FRANCS) FOR COLONIES OF ONE HUNDRED FAMILIES.
TABULAR SURVEY I.

Shares of the Individual Agencies (Total Figures)

	Land Capital and Communal Plantations.	Buildings Capital, Im- provements, Working Capital.	Current Working Capital.	Family Maintenance Until First Products.	Cost of Establishment of Public Institutions.	Maintenance of Colony in First Six Years.	Total.	Per Cent.
(a) Contributions of settlers:								
(1) Of the colonists, 40 families (Farm Type I) .....	.....	107,200	20,000	72,000	.....	.....	199,200	...
(2) Of the colonists, 30 families (Farm Type III) .....	.....	212,400	15,000	216,000	.....	.....	443,400	...
(3) 30 laborers' families (Farm Type VI) .....	.....	3,150	1,500	.....	.....	.....	4,650	...
Total .....	.....	322,700	36,500	288,000	.....	.....	647,250	26.4
(b) Contributions of the Jew- ish National Fund:								
(1) For 40 Colonists' families (Farm Type II)	300,000	.....	.....	.....	.....	.....	300,000	...
(2) For 30 colonists' families (Farm Type III)	112,500	.....	.....	.....	.....	.....	112,500	...
(3) For 30 laborers' families (Farm Type VI)	30,000	88,500	.....	.....	.....	.....	118,500	...
(4) Communal and reserve land, communal plantations	220,000	.....	.....	.....	.....	.....	220,000	...
Total	662,500	88,500	.....	.....	.....	.....	751,000	30.6

CAPITAL REQUISITE (IN FRANCS) FOR COLONIES OF ONE HUNDRED FAMILIES.
 TABULAR SURVEY I.

Shares of the Individual Agencies (Total Figures)

	Land Capital and Communal Plantations.	Buildings Capital, Im- provements, Working Capital	Current Working Capital.	Family Maintenance Until First Products.	Cost of Establishment of Public Institutions.	Maintenance of Colony Community in First Six Years.	Total.	Per Cent.
(c) Contributions of credit institutions:								
(1) For 40 colonists' families (Farm Type II)	428,800	428,800	.....	.....	.....	.....	428,800	.....
(2) For 30 colonists' families (Farm Type III)	318,600	318,600	.....	.....	.....	.....	318,600	.....
(3) For 30 laborers' families (Farm Type VI)	28,350	28,350	.....	.....	.....	.....	28,350	.....
Total	775,750	775,750	.....	.....	.....	.....	775,750	31.6
(d) Contributions of national cultural institutions:								
For public institutions and com- munal expenses	662,500	1,187,000	36,000	288,000	100,000	180,000	280,000	11.4
Total	662,500	1,187,000	36,000	288,000	100,000	180,000	2,454,000	100.0

CAPITAL REQUISITE (IN FRANCS) FOR COLONIES OF ONE HUNDRED FAMILIES.
TABULAR SURVEY I.

Shares of the Individual Agencies (Total Figures)

THIRD SCHEME.		Land Capital	Plantations.	Buildings	Capital, Im-	Standing	Working	Capital.	Current	Working	Capital.	Family	Maintenance	Until First	Products.	Cost of	Establishment	Institutions.	Maintenance	of Colony	Community	in First	Six	Total.	Per Cent.
		and Communal		Improvements,	Capital, Im-	Working	Working	Working	Working	Working	Working	Maintenance	of Colony	Community	Products.	Cost of	Establishment	Institutions.	Maintenance	of Colony	Community	in First	Six	Total.	Per Cent.
(a) Contributions of settlers:																									
(1)	Of the colonists' 30 families (Farm Type IV).....	.....	.....	448,500	15,000	162,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	625,500	.....
(2)	Of the colonists' 20 families (Farm Type V).....	.....	.....	38,800	10,000	18,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	66,800	.....
(3)	Of laborers' 50 families (Farm Type VI).....	.....	.....	5,250	2,500	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7,750	.....
Total.....		.....	.....	492,550	27,500	180,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	700,050	31.9
(b) Contributions of the Jewish National Fund:																									
(1)	For 30 colonists' families (Farm Type IV).....	180,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	180,000	.....
(2)	For 20 colonists' families (Farm Type V).....	60,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	60,000	.....
(3)	For 50 laborers' families (Farm Type VI).....	50,000	147,500	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	197,500	.....
(4)	Communal and reserve land, communal plantations.....	124,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	124,000	.....
Total.....		414,000	147,500	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	561,500	25.6

CAPITAL REQUISITE (IN FRANCS) FOR COLONIES OF ONE HUNDRED FAMILIES.

TABULAR SURVEY I.

Shares of the Individual Agencies (Total Figures)

THIRD SCHEME.	Land Capital and Communal Plantations.	Buildings Capital, Improvements, Working Capital	Current Working Capital	Family Maintenance Until First Products.	Cost of Establishment of Public Institutions.	Maintenance of Colony Community in First Six Years.	Per Cent.
(c) Contributions of credit institutions:							
(1) For 30 colonists' families (Farm Type IV)	448,500	448,500					448,500
(2) For 20 colonists' families (Farm Type IV)	155,200	155,200					155,200
(3) For 50 laborers' families (Farm Type VI)	47,250	47,250					47,250
Total	650,950	650,950					650,950
							29.8
(d) Contributions of national cultural institutions:							
For public institutions and communal expenses	414,000	1,291,000	27,500	180,000	100,000	180,000	280,000
Total	414,000	1,291,000	27,500	180,000	100,000	180,000	2,192,500
							100.0

TABULAR SURVEY II.

Participation of the Individual Agencies (in units per 100—Families' Colony and Settlers' Family).

Scheme.	Colonists (I-V).		Laborers (VI).		National Fund.		National Cultural Institutions.		Credit Institutions.	
	Total.	Per Colonist	Total.	Per Laborer	Total.	Per Settler.	Total.	Per Settler.	Total.	Per Settler.
§ First	I—287,800	3,590	3,100	155	1,329,000 { I—15,000 VI— 6,450 }	280,000	2,800 { I—928,800 VI— 18,900 VI— 945 }	I—11,610		
Second	{ II—199,200 III—443,400 III—14,780 }	4,980 14,780	4,650	155	751,000 { II— 9,700 III— 5,950 VI— 6,150 }	280,000	2,800 { II—428,800 III—318,600 VI— 28,350 VI— 945 }	II—10,720 III—10,620 VI— 945		
Third	{ IV—625,500 V— 66,800 V— 3,340 }	20,850 3,340	7,750	155	561,500 { IV— 7,240 V— 4,240 VI— 5,190 }	280,000	2,800 { IV—448,500 V—155,200 VI— 47,250 VI— 945 }	IV—14,950 V— 7,760 VI— 945		

TABULAR SURVEY.

Participation of the Settlers with their Capital (in absolute relative numbers). Amount Contributed by Individual Agencies Per Settler.

	Settler's Own Capital.					National Fund.			National Fund.			Credit.		
	Farm Types.	Share in Building Capital.	Improvements, Standing Capital.	Consumption Until First Products.	Shares in a Co-operative Credit Society.	Total.	Land Capital.	Communal Land and Reserve Plantations.	Total.	National Cultural Institutions.	Balance of Buildings, Improvements, Standing Capital.	Total.	National Cultural Institutions.	Balance of Buildings, Improvements, Standing Capital.	Total.
I	1,290	1,800	500	3,590	12,500	2,500*	15,000	2,800	11,610	33,000	2,800	11,610	33,000
Per cent..		10.8	...	...	45.4	8.5	35.3	100	8.5	35.3	100
II	2,680	1,800	500	4,980	7,500	2,200†	9,700	2,800	10,720	28,200	2,800	10,720	28,200
Per cent..		17.6	...	...	34.4	10.0	38.0	100	10.0	38.0	100
III	7,080	7,200	500	14,780	3,750	2,200†	5,950	2,800	10,620	34,150	2,800	10,620	34,150
Per cent..		43.2	...	...	17.4	8.2	31.1	100	8.2	31.1	100
IV	14,950	5,400	500	20,850	6,000	1,240	7,240	2,800	14,950	45,840	2,800	14,950	45,840
Per cent..		45.5	...	...	15.8	6.1	32.6	100	6.1	32.6	100
V	1,940	900	500	3,340	3,000	1,240‡	4,240	2,800	7,760	18,140	2,800	7,760	18,140
Per cent..		18.5	...	...	23.3	15.5	42.7	100	15.5	42.7	100
VI	105	...	50	155	3,950	In Scheme I—2,500 II—2,200 III—1,240	I—6,450 II—6,150 III—5,190	2,800	945	In Scheme I—10,350 II—10,050 III—9,090	2,800	945	In Scheme I—10,350 II—10,050 III—9,090
Per cent..		1.5	...	...	59.8 on the average	28.9	9.8	100	28.9	9.8	100

* 4,650 d. X 50 frs. = 232,500 frs.; 500 d. forest X 50 frs. = 25,000 frs.; total, 257,500 frs. for 100 families, or 2,500 frs. per family.
 † 4,550 d. X 75 frs. = 191,250 frs.; 500 d. forest X 50 frs. = 25,000 frs.; total, 216,250 frs. for 100 families, or 2,200 frs. per family.
 ‡ 720 d. X 150 frs. = 108,000 frs.; 320 d. forest X 50 frs. = 16,000 frs.; total, 124,000 frs. for 100 families, or 1,240 frs. per family.

**Instrument
for Establishing
the Colony.**

An agreement will also be necessary between all the promoters of the colony in order to create from the very beginning, an instrument that will realize the idea.

For this purpose it is advisable to create for every new colony a special Settlement Commission, which should be composed of the representatives of the following organizations:

(1) Of the Jewish National Fund, which will supply the necessary land and contribute from the resources of the Tree Fund for laying out the communal plantations.

(2) Of the national cultural institutions which will provide the funds for the public institutions and their maintenance in the first period of settlement.

(3) Of the credit institutions for buildings, improvements, etc.

(4) Of the body of settlers composed of colonists and laborers.

The Commission, which will be composed in this manner until the period of installation is past and the further prosperity of the colony is completely assured, will have to elect from its members a chairman, treasurer, and secretary, and eventually a paid manager, who will carry out the works ordered by the Commission. This manager of the Settlement Commission will have to receive an annual salary of 4,000-5,000 francs for about five years. The sum necessary for this can be added from the beginning to the price of the land.

The Commission as well as its manager, will have to be subordinate to the control of all the bodies concerned. In case the subsequent reorganization, or the dissolution of the Commission is desired, the assent will be necessary of the bodies represented on it.

Through the creation of such an instrument for the establishment of every colony, the drawbacks and the high costs of the administrative method of management will be avoided, and the settlers will be entrusted from the very start with the management of their own affairs. At the same time there will be a guarantee of control by the central organizations interested in the question of colonization, and eventually the co-operation of an expert can be secured for the enterprise.

**The Working Out
of Settlement Plans.**

The Settlement Commission, immediately it is constituted, will have to undertake as its first task the working out of the exact financing scheme, a plan of division, and a well considered plan of settlement of the acquired tract. As soon as the amounts contributed by the various promoters of the colony are secured, the building projects will be set up, examined and approved. There is then nothing in the way of the construction of the farm premises. The Commission seeks contractors for erecting the buildings and concludes agreements. As soon as the buildings are occupied or are ready for occupation, the contractual arrangements of all the parties concerned are again examined and definitely settled.

For carrying out the building plans the Commission will have to consult experts, and this not merely on taking the buildings over, but as soon as the building agreement is concluded.

The building of the settlement premises will begin with the construction of a well, in case the supply of water cannot be arranged without one. After the various structures (dwelling, stable, barn) are ready, the farm will have to be fenced round and the garden hedged in by means of trees suitable for the purpose.

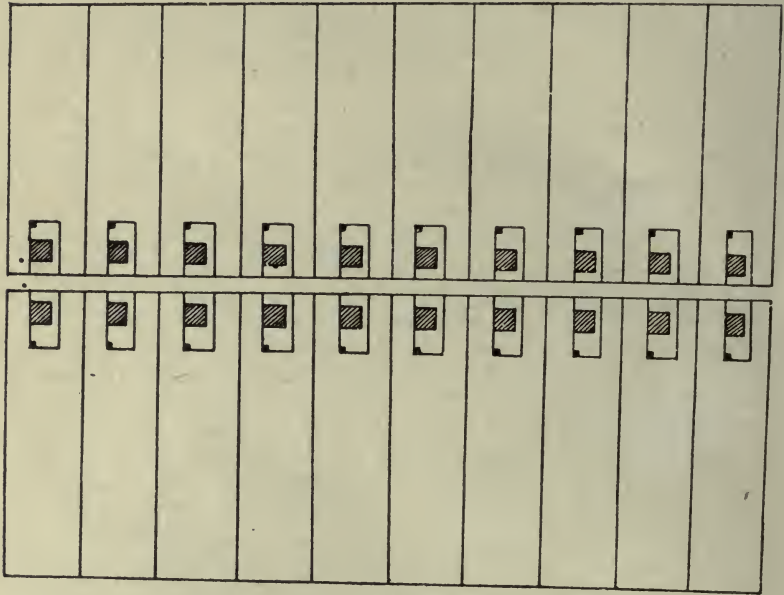
The settler will have to choose his own live stock and implements, with the assistance of the Commission or its manager.

The Commission will have to secure for every colonist or laborer who intends settling on the land the aid of the manager or other technical expert in working out a farming plan. Similarly, in the subsequent development of the farms, measures must be taken for the practical education of the new settlers, even should they possess experience of their own, which is an indispensable condition of their settlement.

In regard to the general plan of settlement, care must be taken from the start that there should be a proper choice of stations of the various kinds of culture (arable land, garden land, afforestation land), of the pasture and reserve land, of the colony buildings, of the public square of the colony, of the school, the hospital, etc. From these suggestions it will be possible to draw up the general plan of a colony as well as the farmyard and building plans of the individual colonists and laborers.

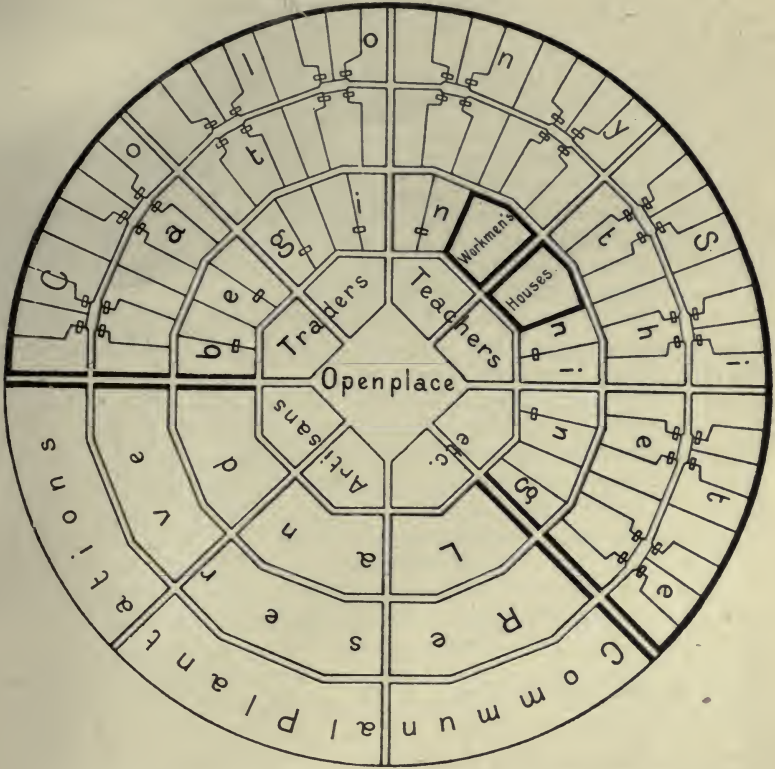
The following sketches are plans of colonies and of farms:

1. Usual plan of farms on both sides of long streets:

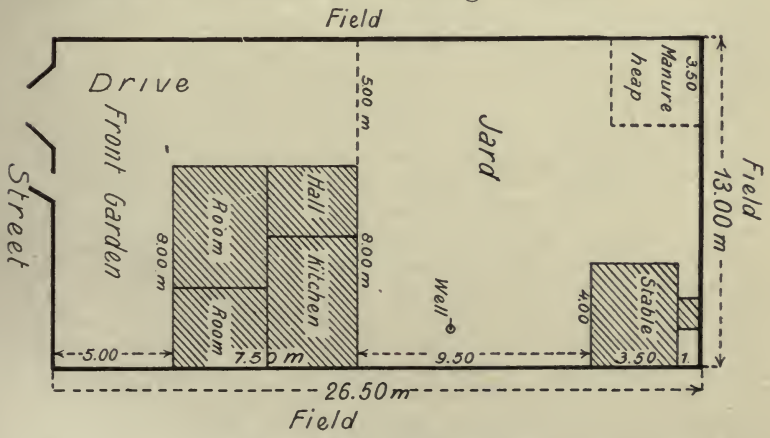


2. Desirable division—in circular form—of the various estates of a colony, of the individual plots for colonists and laborers, of the streets and farms, with a communal square for public institutions (schools, synagogues, people's club, library; co-operative premises such as cellars, dairies, etc.), a market square, and in the centre a quarter for artisans, business people, and representatives of the liberal professions.* The advantages of this order of settlement are not only recognized in many cities, but also for individual settlements in various colonizing countries. The ideal scheme for a colony, which considerably curtails the distances for traffic and transport, for the water supply and the drains, which enables colonists and laborers to live upon their own fields and on their gardens—a factor of so much importance for the success of farming, and which combines therewith the conveniences of village concentration (thanks to utilizing the centre of the colony for public institutions and other general requirements)—this scheme must of course be modified in each individual case in accordance with the local conditions. It nevertheless affords suggestions that deserve to be taken into consideration in planning new colonies.

USUAL PLAN OF COLONY.



3. Farms of a Workmen's Dwelling Settlement.



Enclosure of a Workman's House.

The selection of standard houses for a colony must be carried out on the basis of practical experiences in the country, and above all within the narrowly circumscribed range of the colony. From the technical point of view the standard houses must comply with the following conditions—they should (1) be practically arranged; (2) be substantially built; (3) be as cheap as possible, and (4) present an exterior suitable to the surroundings, yet as prepossessing as possible.

It is more difficult to build a suitable colonist's or laborer's house than to erect a castle. It certainly does not present any technical work of art, but the difficulty consists in creating with modest means a home that satisfies reasonable requirements in regard to solidity, and that is built with a proper distribution of rooms and arrangements, with due regard to local customs and the need of a pleasant exterior.

The Settlement Commission will have to seek out among the types of buildings already existing in Palestine, those most suitable for the new settlement. It will probably have to set up several "experimental houses" of different types, including such as do not yet exist in Palestine, in order to discover by practical experience the most suitable models for later erections.

In this way, after a certain period, one will gradually approach a solution of the difficult house building problem in Palestine, both from the purely architectural point of view as well as from the settlement point of view.

Reducing the Cost of Colonization.

Those who have no practical experience of colonization, are surprised that the settlement of farmers in Palestine is so costly. They ask whether it is not possible to colonize with a smaller expenditure. The answer cannot be expressed either by an unqualified "yes" or "no." It must be rather confined to individual types of farms. There is, first of all, the first type of farm with a preponderance of corn growing in the more remote districts of Palestine. This kind of farming can undoubtedly be carried on at a smaller cost than we have estimated above. But the preliminary conditions must be different from those existing at present. If land is bought in very important districts (e. g., beyond the Jordan), at much lower prices than those customary before the war, if the costs of occupation greatly diminish (as must be the case in time), if the conditions of transport in the regions concerned are improved, and if the experiences of the pioneer laborers, where pioneer work is necessary will be quite satisfactory; then, in comparison with the present outlay, it will be possible to effect considerable savings in the installation of such farms. Besides it is possible even now, to reduce the area of this type of farm to 200 dunam, whereby the outlay upon the purchase of the land will be diminished by 20 per cent. But it will be possible in time to diminish the holdings in such districts

to a much greater degree if the farms will adopt intensive branches of agriculture, namely, fodder growing and dairy farming, and thus pass over to the second type of farm.

In our estimate of the share taken by various agencies in the future work of colonization, the share of the colonist of the first type amounts to 3,590 francs, and that of the second 4,980 francs. It is hardly conceivable that the latter and more intensive form of farming, as well as the following and equally intensive forms, can be carried out in future with a smaller total investment capital than is calculated above. It is only possible, perhaps, that in course of time more favorable conditions of installation than we have suggested will be granted to the colonist on the part of various organizations.

Particularly cheap is the vegiculture type, which, however, is capable of considerable development in Palestine only under certain conditions, which were also explained above. A very small sum is required for the "semi-farmer" type, but this involves the indispensable condition of constant employment. It should not be thought that small colonists' farms can everywhere, and without regard to this consideration, be laid out in great abundance after the type of the cheap workmen's dwellings, and that thus the general wish for wholesale colonization might be realized. On the other hand, one ought not to be deterred by the costs of establishment necessary for the other type. The distribution of the burden among the colonists, as well as a number of bodies which should all represent the missing state and public institutions, renders it possible that a small part of the investment capital is required from the colonist, in order that he can establish his farm, and a still smaller part of the capital from the laborer.

One ought also not to forget the great importance attaching to the fact that the land will be given to the settler upon hereditary lease by the National Fund (without any advance payment of the land value, and only upon payment of a very moderate rent). If the Jewish National Fund will really be able to give the land under these conditions to all new settlers, and if the colonists will fully appreciate the advantages of hereditary lease, then this factor alone will cause a very considerable reduction of the investment capital at present necessary for them.

A comparative cheapening of the costs of establishment will also be effected by the increase in profitability of the various branches of agriculture. The progressive economic development of the country—in combination with the abolition of all evils in the sphere of public safety, taxes, credit, etc.—will teach one more to regard such amounts as we have mentioned as not exaggerated investments.

And if the economic stations of the types of farms, together with the capital requisite for them, and with the possible products in the near future, are conceived in accordance with the present

position of affairs, then it is quite possible that transitions from poorly productive types to richly productive types, will not require very much time. One can thus imagine that in the course of the next decade, the transition from Farm Type I to Type II will take place more and more frequently, and that the time will come sooner than we think when, of the two types, the second will be the only one to be adopted in the parts of Palestine that can be colonized. On the other hand, it will be possible to unite this second type (dairy farming as main branch) pretty frequently in harmony with the third branch (tree plantations as principal culture). The occupant of a workman's holding will also be able to rise to the fifth (vegetable) type, and perhaps also to a profitable combination of this with the second type (dairy farming).

In view of all that has been said, the reduction of the cost of colonization, which we had clearly in mind in our calculations, ought not to go so far that the development of the individual colonists farms as well as of the individual settlements would be imperilled, and that sooner or later these funds would after all become requisite which were at first withheld from it. Obstacles that can be foreseen and losses that it would afterwards be difficult to make good, ought to be avoided from the beginning. And it is better, if the funds are deficient, to start work with a smaller number of new colonists than to render still more difficult for a large number of settlers, through inadequate equipment, the already difficult struggle of clinging to the soil.

Besides, settlement in other countries does not come any cheaper than in Palestine. In Germany the "Settlement Commission" reckons with an average sum of 30,000 marks per settler. In the Argentine, on the average, the establishment of a colonist costs not less than 14,000-16,000 pesos, i. e., 32,000-36,000 francs. There is therefore no reason to complain of any special expensiveness of Palestinian colonization. It is possible that in the future, we shall hear of an increase in the profitability of the individual branches of agriculture, as well as, above all, of an improvement of the general conditions for a more extensive settlement activity, but not exactly of a considerable reduction of the investments of capital and labor requisite for the founding of colonists' farms in Palestine.

If all the forces and organizations that aim at the Jewish agricultural colonization of Palestine, and also at the dissemination of agriculture among the Jews will work hand in hand, then the colonization of Palestine will not appear a too expensive or unattainable object.

D.

Sketch of a General Plan of the Jewish Agricultural Settlement of Palestine.

If Jewish colonizing activity in Palestine is not to be confined in future merely to the establishment of individual colonies from time to time, then we must think of a plan for founding a great number of large colonies, which should from the very beginning contain not fewer than 100 families each. After a certain time it must become possible to found every year a certain number of colonies of a hundred families each.

In the National Fund we already possess the organ which will be able in the not too distant future to expend upon land purchase as much as will be necessary for the establishment of such colonies. The J. N. F. will certainly have the opportunity in ever-increasing measure of discharging its task of offering Palestinian territory upon hereditary lease as the inalienable property of the Jewish people. It will also be able to lay out forest plantations in connection with every settlement, and thus to undertake the reafforestation of Palestine upon a much more extensive scale, and at a comparatively less expense than hitherto. It will, lastly, be able to give powerful support to the establishment of a considerable number of compact workmen's settlements in connection with newly created opportunities of employment, and to promote the Co-operative Occupation Societies as well as other forms of Laborers' Co-operative Societies.

The Zionist institutions will find in the new colonies a very wide field for their activity, growing in scope from year to year. The task that will have to be undertaken by the Zionist Organization, namely, to look after the public institutions of each new colony during the first period of establishment, will not prove impracticable with a regular increase in the number of new colony-communities, as the productive power of the new colonies will be able to raise these means also.

On the other hand, private initiative will render available a considerable portion of the money necessary for the founding of highly capitalized farm-types.

The creative spirit of the colonies, combined with adequate activity in one agricultural branch or other, will be able to stand the test. The endeavors of the laborers, especially in regard to co-operative occupation activity, the undertaking and execution of certain works by agreement (laying out and tending of plantations, etc.), the creation of workmen's settlements and of the indispensable, preliminary conditions connected therewith for an economic advance, will approach realization more and more.

We already now possess the most important factors for the promotion of Palestinian colonization. They bear within them the germs of magnificent developing capacity. The financial in-

strument for the promotion of Jewish colonization in Palestine—the banking organization—has been in existence since the early period of the Zionist movement. The services rendered by the Zionist banks in supplying current capital for various colonizing enterprises are deserving of the highest recognition.

Our movement, however, does not yet possess those banking institutes and colonization companies that would be able to grant long-term credits for the installation of colonists' farms in a considerable number with suitable conditions of repayment.

We are convinced that as soon as Jews are granted liberty of colonization in Palestine, we shall be able to raise the many million of francs that are necessary to found new colonies every year.

Rate of Colonization

It is easy to imagine that if in the first three years of a new era of colonizing activity, three new and systematically planned hundred-family colonies are successfully established, it is possible that in the next three years, two such colonies will follow each year, then three each, four each, etc. Every series of new colonies will make propaganda for a larger following series. If we assume a progressive series of 1×3 , 2×3 , 3×3 , 4×3 , there would spring up in the course of about twelve years thirty new Jewish centers with an initial agricultural population of 3,000 families, or 15,000 souls. Moreover, about 40,000 to 50,000 Jews of other professions would be attracted by them to the country. What such figures mean for the agricultural settlement of Palestine, and what high value lies in the creation of thirty new Jewish centers for the agricultural development of the country and the growth of its Jewish population, can be estimated from the already great importance of the existing colonies.

In order to create thirty new, large colonies according to the scheme outlined above, about 73 million francs would have to be raised in the course of ten to twelve years from different sources.

If, for example, in the course of twelve years five colonies are laid out according to the first of our three schemes, fifteen according to the second, and ten according to the third, then the extent of the financial share of the various factors in the thirty colonies will be shown by the following absolute and relative figures: The colonists would have to provide 17,998,000 francs or 24.6%, the laborers 162,750 francs or 0.2%, the National Fund 23,525,000 francs or 32.3%, the cultural institutions (establishment of the public institutions and their maintenance, during the first six years) 8,400,000 francs or 11.5%, the credit institutions 22,884,250 francs or 31.4%.

In accordance with the assumed progression of one, two, three and four colonies founded each year during the first four three-year periods, the individual promoters would have to contribute their funds in the following amounts for the thirty colonies:

TABULAR SURVEY IV

CAPITAL REQUIRED FOR FOUNDING THIRTY COLONIES

Participating Agents	Farm Types	No. of Families	Amount in Francs	Farm Types	No. of Families	Amount in Francs	Farm Types	No. of Families	Amount in Francs	Total Amount	Per Cent
A. Colonists:											
Scheme I	I	400	1,436,000	...	...	...	...	...	...	1,436,000	...
Scheme II	II	600	2,988,000	III	450	6,651,000	...	...	...	9,639,000	...
Scheme III	III	300	6,255,000	V	200	668,000	...	...	...	6,923,000	...
							Total,		17,998,000	17,998,000	24.6
Laborers:											
Scheme I	VI	100	15,000	...	...	...	...	...	...	15,000	...
Scheme II	VI	450	69,750	...	...	...	...	...	...	69,750	...
Scheme III	VI	500	77,500	...	...	...	...	...	...	77,500	...
							Total,		162,750	162,750	0.2
B. Jewish National Fund:											
Scheme I	I	400	6,000,000	VI	100	645,000	...	...	...	6,645,000	...
Scheme II	II	600	5,820,000	III	450	2,677,500	VI	450	2,767,500	11,265,000	...
Scheme III	IV	300	2,172,000	V	200	848,000	VI	500	2,595,000	5,615,000	...
							Total,		23,525,000	23,525,000	32.3

TABULAR SURVEY IV—Continued
CAPITAL REQUIRED FOR FOUNDING THIRTY COLONIES

Participating Agents	Farm Types		Amount in Francs		Farm Types		Amount in Francs		No. of Families	Farm Types	Amount in Francs		No. of Families	Farm Types	Total Amount	Per Cent
	No. of Families	Amount in Francs	Farm Types	No. of Families	Amount in Francs	Farm Types	No. of Families	Amount in Francs								
C. National Cultural Institutions:																
(a) Costs of Establishment.																
Scheme I	I	400	400,000	VI	100	100,000	...	...	...	...	...	500,000	...	...	500,000	...
Scheme II	II	600	600,000	III	450	450,000	VI	450	450,000	...	...	1,500,000	...	...	1,500,000	...
Scheme III	IV	300	300,000	V	200	200,000	VI	500	500,000	...	...	1,000,000	...	...	1,000,000	...
											Total,	3,000,000			3,000,000	4.1
(b) Cost of Maintenance.																
Scheme I	I	400	720,000	VI	100	180,000	...	...	...	...	...	900,000	...	...	900,000	...
Scheme II	II	600	1,080,000	III	450	810,000	VI	450	810,000	...	...	2,700,000	...	...	2,700,000	...
Scheme III	IV	300	540,000	V	200	360,000	VI	500	900,000	...	...	1,800,000	...	...	1,800,000	...
											Total,	5,400,000			5,400,000	7.4
D. Credit:																
Institutes:																
Scheme I	I	400	4,644,000	VI	100	94,500	...	...	...	...	...	4,738,500	...	...	4,738,500	...
Scheme II	II	600	6,432,000	III	450	4,779,000	VI	450	425,250	...	...	11,636,250	...	...	11,636,250	...
Scheme III	IV	300	4,485,000	V	200	1,552,000	VI	500	472,500	...	...	6,509,500	...	...	6,509,500	...
											Total,	22,884,250			22,884,250	31.4
											Grand Total,	72,970,000			72,970,000	100

Then the settlers, together with national-cultural institutions, will have to contribute about a third, and both the National Fund and the credit institutes will each have to contribute a similar amount. The fact that two-thirds of the requisite capital are provided from other sources will, to a certain extent, afford a guarantee for the loan to be granted by the credit institutes.

**Central Organ
for the execution
of systematic
Colonization in
Palestine**

In order that the necessary funds may be brought together by all the bodies interested in the carrying out of a systematic colonization, the Zionist Organization will sooner or later have to appoint a Central Colonization Committee for Palestine. This Central Committee will have to comprise representatives of the Executive of the Zionist Organization (the "Inner Actions Committee"), the National Fund, the credit institutes or colonization companies that will co-operate, and the settlers (colonists and laborers).

The collaboration of the representatives of all the agencies concerned in the colonization of Palestine will considerably facilitate the raising of the necessary funds for systematic settlement work. If not only the "Inner Actions Committee" and the National Fund, but also the creditors as well as the colonists and laborers will be represented in the Central Committee of Palestinian colonization, we shall acquire a systematic procedure, which is at present lacking, in regard to the subsequent colonizing activity in Palestine, and the functions of each agency engaged in the great work will be clearly established. And if, within the approximate scope of our schemes, the settlers, together with the Zionist institutions ("Inner A. C." and National Fund), raise two-thirds of the requisite capital for the future colonies, then the Zionist banks and other credit-giving colonization companies which will be disposed to work in Palestine will be able to be induced to participate with a third of the total amount necessary. If the first colonies financed in this manner promise a successful development, it will be possible to raise double this amount for colonization in the following three years, then thrice the amount, etc., until the new colonies in Palestine fully correspond to our aims in this direction and to the capacity of the country.

The practical training of the Jewish laborers, the preparation of the colonizing material, the accumulation of experiences in the spheres of practical colonization policy, of technical problems of agriculture, of communal organization, etc., will go hand in hand with the constant establishment of new colonies, adequate in size and systematically developed. In this way we shall, after not too long a period, fortify our positions in Palestine upon the solid basis of agriculture to such an extent, that the immigration and settlement of the Jews will visibly increase from year to year.

At the same time various industries for the conversion of the products obtained in the colonies (soap manufacture, mill industry, fruit and vegetable preserves, etc.), will develop. The constantly increasing growth of agriculture, together with the branches of industry adapted to them, will create sound economic conditions over an even wider area. The systematic organization of the new communities, which will increase in number in constant progression, the development of a national network of schools, measures of social welfare, the methodical laying-out of laborers' settlements, the ever-progressive development of the co-operative system—all this will result from adhesion to a plan for the systematic enlargement of the number of new colonies corresponding to the conditions of the country.

* * * * *

It is quite conceivable, however, that the rate of the Jewish settlement of Palestine will be much more rapid than we have assumed above, especially if orderly conditions are re-established in Turkey, and the Jews acquire the liberty of settling in Palestine.

Although, even within the scope of the above schemes, there will be room for all vital tendencies that have hitherto found expression in regard to Palestinian colonization, yet much greater possibilities than could arise in the not distant future are not precluded.

Proceeding from the principle set forth above in regard to the laying-out of colony-units with a definite minimum number of families, let us assume that we were faced by the situation in which we could utilize all the colonizable lands of Palestine for a Jewish settlement. Would not the next task then be, to determine how many colony-communities with an initial minimum number of family-farms could be created altogether, and how much capital would be requisite for this purpose? We should then have to determine a general plan of colonization, based upon an accurate consideration of the natural and economic conditions of the territory. As at the beginning of Palestinian colonization, individual colonies would first be called into existence; but, in contradistinction to the first period of colonization, full regard would have to be paid to the national interests of the community. The principles of autonomy as well as of national control would thereby attain their full right, as well as the efforts to provide employment for as many Jewish laborers as possible, to offer Jewish working settlers the land for cultivation under favorable conditions, and to attract Jewish capital.

As soon as it were possible to acquire extensive tracts of land on both sides of the Jordan, we should be faced by the following preliminary labors:

1. To make an exact geodetic record of the lands in question

and to work out a plan of division into a certain number of colony-communities;

2. To calculate the capital requisite for the founding and construction of the colony communities with so and so many family-farms of the most varied types.

We shall now attempt such an estimate upon the basis of the data at our disposal.

Capital requisite for a Jewish agricultural settlement of Palestine

Upon an arable area of about 1,200,000 to 1,500,00 hectares there could in future exist 150,000 to 200,000 and perhaps even more small agricultural farms. Let us confine ourselves to calculating the amount of capital requisite for the establishment of 100,000 new family-farms for half a million Jews. For the present we may leave out of the question entirely the period that is necessary for the settlement of such a multitude of colonists.

Let us further assume that the 100,000 farms will be distributed in the following proportions among the various types of farms:

I. 20,000 farms with preponderance of corn-growing upon 20 hectares each of non-irrigable land = 400,000 hectares (on the assumption that the profitability of corn-growing in Palestine will have risen very considerably in comparison with the present rate of profit).

II. 20,000 farms with a preponderance of intensive cattle-rearing (with the cultivation of lucerne, soya beans, etc.), upon 10 hectares each of non-irrigable soil = 200,000 hectares.

III. 20,000 farms with a preponderance of unwatered plantations, almond trees, olive trees, vines, fig trees, etc.), upon $7\frac{1}{2}$ hectares each = 75,000 hectares.

IV. 10,000 farms with a preponderance of watered plantations upon 4 hectares each = 40,000 hectares.

V. 10,000 farms with a preponderance of one or two-year irrigated cultures (vegetable, later cotton, cane sugar, etc.), upon 2 hectares each = 20,000 hectares.

VI. 30,000 farms for workmen's dwellings, 20,000 of which upon half hectare each of irrigable and 10,000 upon two hectares each of non-irrigable land = 30,000 hectares.

The total amounts to 765,000 hectares.

In accordance with this scheme there would still remain sufficient land (500,000 to 700,000 hectares and perhaps even more) for the present agricultural population of the country as well as for the next generation.

Together with the costs of occupation (taking possession, surveying, parceling, adaptation), the amount required for the acquisition of 695,000 hectares of non-irrigable and 70,000 hectares of irrigable land would be about 500 million francs, in case the

entire territory could be acquired by purchase, and was not to be obtained—at least in part—on a long-term or permanent lease from the Government (Tschiflik or Vakuf lands), according to the following estimate:

I.	400,000	hect.	@	500	frs.....	200	million	frs.
II.	200,000	"		750	"	150	"	"
III.	75,000	"		500	"	37.5	"	"
IV.	40,000	"		1,500	"	60	"	"
V.	20,000	"		1,500	"	30	"	"
VI.	(a) 10,000	"		1,500	" }	25	"	"
	(b) 20,000	"		500	" }			
Total.....						<u>502.5</u>	million	frs.

It is quite possible that, assuming the lease of State lands and the purchase of large tracts, especially beyond the Jordan, the amount of capital requisite for the purchase of land may be considerably less than may be assumed from the prices in force before the war.

The various types of farms would be distributed in the following manner among the different schemes that we have sketched (see Tabular Survey I):

(A)	160 colonies (upon 2,500 hectares each with 80 agricultural farms each and 20 workmen's allotments) @ 2,847,000 frs.	455,520,000 frs.
(B)	250 colonies (upon 900 hectares each with 40 intensive cattle-rearing farms, 50 non-irrigated plantation farms and 30 workmen's allotments) @ 2,454,000 frs.	613,500,000 "
(C)	390 colonies (upon 250 hectares each with 30 watered plantation-farms each, 20 watered one and two year cultures [vegeculture, etc.] and 50 workmen's allotments) @ 2,192,500 frs.....	855,075,000 "
Total, <u>1,924,095,000</u> "		

Thus for the creation of 800 villages (or garden-cities) a capital of about two million francs (about £80,000,000) would be necessary. This sum will include the expenditure upon land purchase, the erection of buildings, technical improvements (draining and irrigation, etc), the working-capital and the other requirements of the individual farms. It will also include the costs of establishment of the public and intellectual institutions and the maintenance of the communal institutions for a period of a few years.

Moreover, the cost of a certain tract of reserved land is included therein, so that the number of farms could increase in the near future from 80,000 to 100,000. The expense of the afforestation of tracts unsuitable for agriculture near every village is also taken into account, as well as the provision of a certain area of communal land, which will have to form a source of revenue for the cultural and other requirements of the communities.

Many a colony will doubtless also lead to the realization of the modern aim of combining town and village in the form of a garden-city, in which all kinds of occupations, rural and urban, can be harmoniously represented. As we have already experienced, upon a comparatively small scale, in the case of suburban colonization (Tel-Abib, Herzliah), not only will there be advances of capital from national and public sources, with good economic prospects, but there will also be a considerable application of private capital and of money borrowed from bank institutes and colonization companies.

The share of the various parties in raising the funds necessary for such a splendid work of colonization would manifest itself in a ratio similar to that shown in our estimates for the establishment of single colonies. The 70,000 colonists' families would have to contribute about 420 million francs, and the 30,000 workmen's families about 465,000 francs. In addition to this the National Fund, which would prepare the land, carry out the afforestation of suitable tracts, and have to build the workmen's dwellings would have to provide about 660 millions.

The national cultural organization would have to contribute for the public and social institutions (including obligatory elementary schools) about 200 million francs in the course of the period of settlement. The foundation and maintenance of higher grade educational institutes and of scientific research institutes would claim a part of the expenditure upon urban colonization.

The remaining 650 to 700 million francs, which will be necessary for the Jewish agricultural settlement of Palestine, will have to be raised by means of credit operations with the repayment spread over many years (say, a generation) and by national loans.

**Scope of the
Zionist problem in
reference to the
agricultural settle-
ment of Palestine**

By means of these amounts, which would have to be brought together from the most varied sources, the Zionist problem, so far as the agricultural settlement of Palestine is concerned, could be solved. However fantastic the total amount of capital required may appear, it is nevertheless not inconsistent

with the magnitude of the problem, the needs of the Jewish people, its potential strength, its actual financial resources, and the possibilities of Palestine.

The concentration of the necessary capital upon the aim defined in the foregoing paragraphs, is a question of time. But in order that this time should not be deferred too long, the entire plan will have to be distributed over not too long a series of years, in proportion to the increasing vigor of the Jewish people and with the aid of more or less favorable external circumstances. And if large national funds, and funds obtained by national loans, will be available, then a corresponding number of colonies with a certain minimum number of families will have to be provided for annually for a certain number of years, and they will have to be prepared by a corresponding collaboration of all national and individual Jewish forces.

Just as each of the Scandinavian states, since 1900, provides certain sums for the annual establishment of a certain number of new agricultural farms for periods of 3 to 5 years, so must our national organization also determine upon the provision of certain amounts for the annual colonizing of a certain number of families in a certain number of new colonies.

Programme of the Central Organ for the Jewish Colonization of Palestine As regards the carrying out of the agricultural colonization of Palestine, the body to which this task should be assigned (Central Committee for Palestinian Colonization) will have something like the following programme before it:

1. To carry out cartographic investigations, land surveys, and technical and other preliminary studies in regard to the lands suitable for a Jewish settlement of Palestine.

2. To organize settlers' companies, consisting each of a hundred families of future colonists and laborers, for the founding of one colony each (improved Achuzah societies, etc.).

3. To constitute settlement commissions for each single colony, consisting of representatives of (a) the settlers' company (colonists and laborers, afterwards members of other occupations too), (b) the National Fund, (c) the national cultural organizations, and (d) the credit-giving corporations.

4. To carry out the establishment of the colonies (with the aid of the individual settlement commissions) while aiming at the creation of a Jewish working peasantry with autonomous administration as well as of a Jewish agricultural laboring class.

5. To draw up plans and estimates and to carry out preliminary labors (improvements and adaptation) for the next series of colonizing years.

**The concrete task
for the next
colonizing period**

Whatever the conditions for colonizing activity in Palestine after the war may be, the method of laying out new colonies will have to be the same. The plan, from the quantitative point of view, will consist in determining that a large or small number of colonies shall be founded in the course of a certain period to be decided in advance.

But, first of all, all the settlements already begun must be developed into a vigorous condition. The colonies and farms that are furnished with inadequate areas and have too small a population, will have to be reduced to the corresponding minimum standards.

Among the older settlements to be developed would those isolated colonies, like Kastinieh and Artuf, the principal obstacle to whose development has consisted from the very beginning until now in their small number of settlers.

Moreover, side by side with the National Fund farms as well as the co-operative settlement farms (Ben-Shemen, Huldah, Merchaviah, Daganiah) sufficiently large settlements must be laid out, which, together with the inhabitants of the existing farms, should form colony-communities of at least 500 souls.

Furthermore, the private companies, which still confine themselves to the administrative form of cultivating their estate (Migdal, Ruchamah, Poriah, Ramah, etc.) should draw up, the sooner the better, general plans for the settlement of as large a number of families as possible.

Similarly, the estates at present in the first stage of occupation (Kafar Uriah, Abu Schusche, Bir Adas, Kerkur and Bedus, Mesra, etc.) must set up as soon as possible colony-plans corresponding to the conditions of each territory.

Finally, in the case of every future acquisition of land, the endeavor to found vigorous and independent colony-communities, in case the new territories do not border upon older Jewish settlements of sufficient area, must be regarded as the most essential condition of a prosperous colonization policy.

Conclusion.

In the course of colonizing work which will consist in the laying out of large colonies, all questions that have emerged in recent years in the practical work in Palestine of the Zionist Organization will find their solution: The occupation of new tracks will certainly attract a considerable number of young pioneers. Technical work (irrigation and draining), measures of improvement, road-building, the construction of promenades for new colony-communities, will, if undertaken systematically and with adequate funds, provide new immigrants with ample labor and afford the most fruitful opportunities for practical training.

The period of laying out the colonies is just the one in which unskilled laborers can best acquire practical hints and methods that will be of use to them when they will have risen to the position of cottagers or colonists. Most of the practical knowledge that the Palestinian Colonists and Laborers now displayed is derived from the period of the establishment of colonies and farms.

The systematic laying out and development of a certain number of colony-communities during pre-determined periods of not too great length will help to carry out other important tasks, such as the problem of afforestation of lands unsuitable for agricultural purposes, the widest application of the cooperative principle in the sphere of production, credit, purchase and sale, the industrial conversion of certain raw-products into semi-manufactured articles and permanent wares, etc.

New colonies, in which such points of view will predominate from the start, will certainly form an attraction for Jewish industry and Jewish capital.

For concrete colony plans, in which the participation of the interested settlers and the national institutions will be secured, not only will the broad masses of the Jewish people be won in a much higher degree than hitherto, but also those financial circles that have hitherto been disinclined to advance any money for Palestinian enterprises. Just as European and American capital will be available for big undertakings in connection with harbors, irrigation works and transport, so also will the necessary capital be found for financing the establishment of colonies, for which a considerable part of the investment capital will have already been raised by the parties concerned and the Jewish organizations.

The first short period—let us say, of three years—of the development of a comparatively limited number of systematically founded colonies with budgets determined and guaranteed in advance will form the best propaganda for the next period with a considerably increased number of new colony-communities.

Jewish Colonization in Palestine

Methods, Plans, and Capital

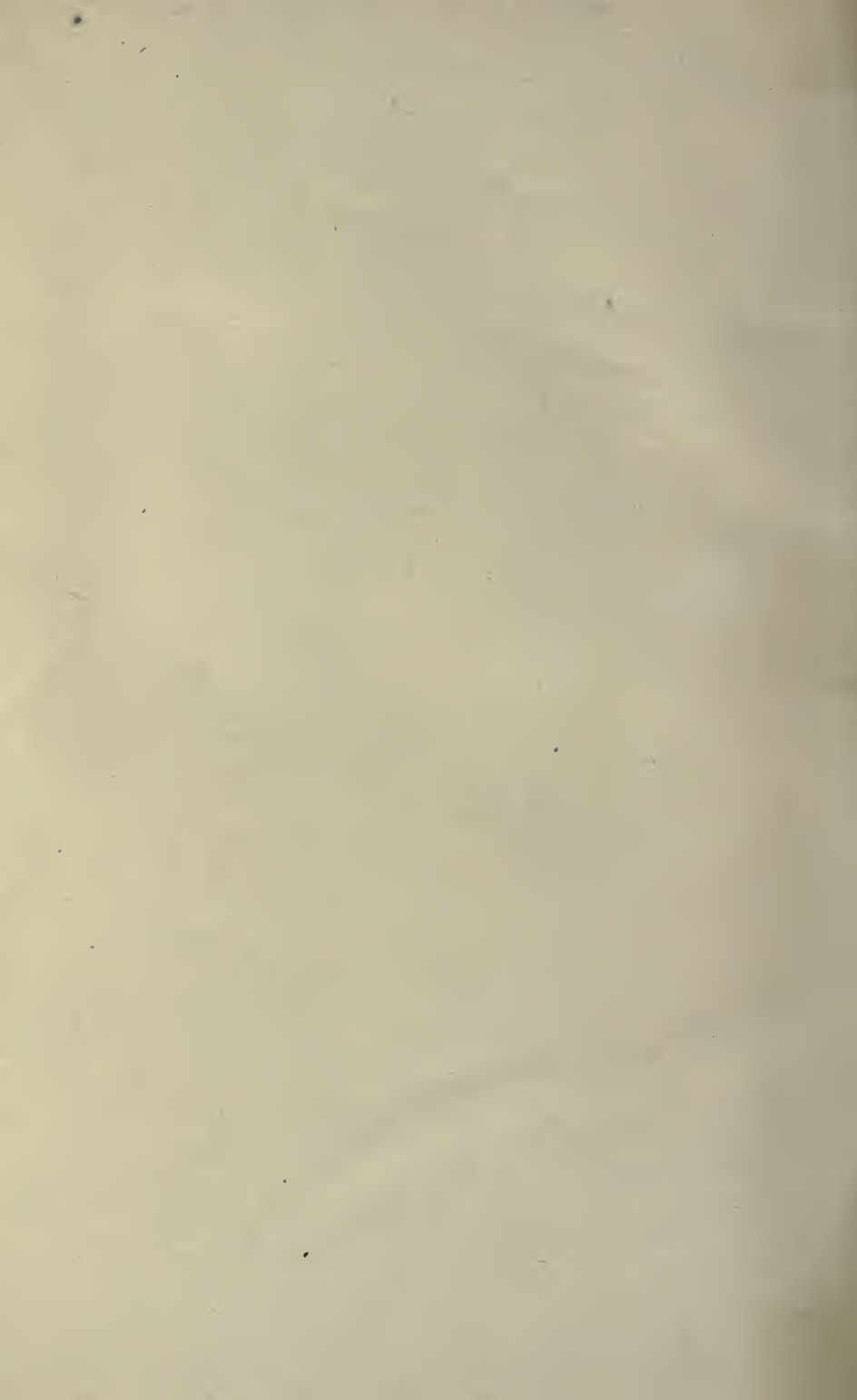
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JACOB OETTINGER

ERRATA ET CORRIGENDA

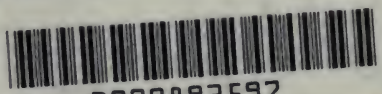
<i>Page</i>	<i>Line</i>	<i>For</i>	<i>Read</i>
3 (Contents)	14.	Industrial Farm Types	Individual Farm Types
3 (Contents)	16.	Interior Administration	Interim Administration
4 (Contents)	4.	Unwatered Tree-Nurseries	Non-irrigated Plantations
4 (Contents)	22.	Main- of a Colony	Maintenance of a Colony
6 (Tables)	10	family	family)
11	23.	must,	must
12	22.	preparing	providing
15	23.	communities:	communities;
16	10.	kinds of culture	cultures
18	17.	domestic colonization	home colonization
19	3.	domestic colonization	home colonization
19	35.	relationship of landlord and tenant	relationship of tenancy
19	38.	status of proprietor	status of ownership
21	23.	domestic colonization	home colonization
21	25.	domestic colonization	home colonization
22	4.	adaption	adaptation
22	4.	colonization material	would-be colonists
23	19.	prosecution	production
23	40.	drying	draining
25	48.	natural	national
26	19.	agriculture	corn-growing
26	26.	farming considerations	colonization
27	11.	There	There are
32	32.	sugar-beet	sugar cane
33	22.	Tree-nurseries	Plantations
35	38.	walks	plantations
35	41.	capital outlay	foundation capital
36	22.	Lithanian	Lithuanian
38	12.	economical	economical
40	44.	vegetables	leguminous plants
41	25.	Liquidation	Redemption
43	22.	agriculture	corn-growing
43	23.	unwatered	non-irrigated
43	28.	vegetables	leguminous plants
43	31.	agriculture	corn-growing
44	1.	if	of
44	7.	agricultural	corn-growing
44	20.	tree-nursery	plantation
47	23.	tree-nursery	plantation
47	42.	tree-nursery	plantation
48	7.	tree-nursery	plantation
50	28.	tree-nursery	plantation
50	42.	on	of
51	18.	unwatered tree-nurseries	non-irrigated plantations
51	21.	tree-nurseries	plantations
51	34.	country	area
51	39.	on the contrary	omit
51	43.	; but	, whereby
51	43.	species	sorts
52	13.	tree-nurseries	plantations
52	17.	tree-nurseries	plantations
53	4.	tree-nurseries	plantations
53	20.	tree-nurseries	plantations
53	29.	tree-nurseries	plantations
54	25.	Oscher	Osher
54	28.	Methods of Jewish Colonization	omit

Page	Line	For	Read
55	31	Oscher	Osher
56	46.	, of course,	<i>omit</i>
57	20.	"partial lease"	"share-lease"
57	22.	absentism	absenteeism
57	31.	preparation	provision
57	32.	problems	problem
57	35.	Achuzoth	Achuza
57	36.	be represented as	constitute
57	37.	as	a
57	37.	really	<i>omit</i>
57	43.	unwatered	non-irrigated
58	6.	every	very
58	7.	plants and among	plants,
58	38.	gardens	gardens)
59	29.	.....	orange-grove
59 and 60		..... <i>make similar correction to end of chapter</i>	
59	35.	form of estate	farm type
60	6.	in vogue	carried on
61	2.	preparation	preserving
61	11.	A soon	As soon
61	45.	then more ought	the more one ought
65	2.	tree-nursery	plantation
65	13.	tree-nursery	plantation
65	32.	can,	can
67 heading		Foundation on Capital	Foundation Capital
67	9.	tree-nurseries	plantations
67	13.	tree-nurseries	plantations
68	25.	tree-nurseries	plantations
70	38.	tree-nurseries	plantations
71	5, 6.	tree-nurseries	plantations
72	9.	vegiculture	vegiculture
73	7.	commercial	communal
73	28.	agricultural	corn-growing
73	32.	agricultural	corn-growing
75	26.	Rehoboth	Rehoboth)
75	27.	Gederah	Gederah)
75	39.	veterinary surgeon	medical assistant
76	14.	veterinary surgeon	medical assistant
76	31.	several	a few
80	13.	tree-nurseries	plantations
82	30.	richly	a richly
83	4.	for (Type VI)	(for Type VI)
94	2.	farms on	farms laid out on
94	9.	professions*	<i>omit asterisk</i>
94	11.	individual	agricultural
95	1.	Usual Plan of Colony	Plan of Colony in Circular Form
95 bottom diagram		Jard	Yard
96	3.	range	region
96	37.	important districts	large areas
96	42.	necessary	necessary,
96	45.	besides	besides,
96	45.	now,	now
97	46.	stations	habitats
105	34.	cane-sugar	sugar-cane
106	3.	Tschiflik or Vakuf	Tchiflik or Crown
106	26.	50	30
106	35.	(or garden-cities)	<i>omit</i>
106	42.	communal	communal
107	6.	communal	communal
107	28.	organization	organizations
109	11.	reduced	increased
109	13.	would	would be
109	23.	cultivating	managing
109	23.	estate	estates
109	41.	tracks	areas
109	43.	construction of promenades	laying out of plantations
110	15.	permanent wares	preserves.



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