

SHERMAN LEROY WALLACE

Taxation in Egypt
from Augustus
to Diocletian



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TAXATION IN EGYPT
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AUGUSTUS TO DIOCLETIAN

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BY

SHERMAN LEROY WALLACE

UNIVERSITY OF WISCONSIN

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TO
THE MEMORY OF MY
FATHER

PREFACE

IN this volume I have attempted to give a detailed and comprehensive discussion of the system of taxation in Egypt from the beginning of the principate of Augustus until the accession of Diocletian. In 1899 Wilcken published Volume I of his *Griechische Ostraka aus Aegypten und Nubien*, which contained a detailed discussion of the evidence then available concerning taxation in Graeco-Roman Egypt. When the work for the present volume was begun in 1931 there had been no comprehensive treatment published since Wilcken's, although very many new documents referring to taxation, particularly in Lower Egypt, had been made available within that interval. It therefore seemed a service to papyrologists and to students of economic history to reduce the new and old evidence to order, and the results of five years of study are here presented. I wish to express my sincere thanks to the Rockefeller Foundation which, through the Council on the Humanities of Princeton University, gave generous financial assistance that enabled me to devote an entire year to uninterrupted preparation of this volume, and which contributed generously towards the publication of it.

After the preparation was begun, however, the publication by Kiessling of the third volume of Preisigke's *Wörterbuch*, including alphabetic lists of taxes and collectors together with references to the sources, and the appearance of the article *Τέλη* by Schwann in Volume A 9 of Pauly-Wissowa's *Realencyklopaedie* made easier the access to evidence bearing on the system of taxation in Egypt. Nevertheless, it is hoped that the present study is more complete than any hitherto available, and that a fresh consideration of the evidence has made progress towards the solution of some of the problems involved. In spite of the great increase in the number of published tax-documents, many points in the system of taxation remain obscure. Consequently there will be found a certain unevenness in the following chapters, for I have sometimes been compelled to abandon the systematic treatment of taxation and resort to alphabetic lists of taxes such as are familiar in earlier works.

Our evidence is largely confined to a few districts in Egypt and, since the system of taxation is not uniform, it is more than probable that further publications of papyri may sweep away some of the conclusions now offered as easily as new evidence has disproved solutions presented by earlier students.

This study I have endeavoured to make as complete as the present state of the documentary evidence allows. Experience has indicated, however, that it is practically impossible to control every published document, in spite of the excellence of the Princeton University Library's collection of published papyri where the material for this volume was collected. An effort has been made to make the text of this volume intelligible to students of economic history who are not familiar with Greek, but the attempt has not been wholly successful and was abandoned in Chapter XVII, where the variety of collectors and of their activities could not be represented by translations of their titles or of the taxes which they collected. The index is in Greek, but there is also a brief index of English and Latin terms for which there is no Greek equivalent in this volume. I have not included a systematic bibliography. Most of the significant studies of taxation since Wilcken's *Ostraka* have appeared in connexion with the publication of tax-documents, and references to these and to other discussions will be found in the notes on the various taxes. It seems unnecessary to repeat the select bibliographies which may be found in Volume X of the *Cambridge Ancient History* and in A. C. Johnson's *Roman Egypt*. The abbreviations used in this volume to indicate collections of papyri have been taken for the most part from Preisigke's *Wörterbuch* and his *Berichtigungsliste*.

I wish to express my obligation to the authorities of Princeton University Library and of the Library of the University of Wisconsin for assistance in assembling reference material. I feel a special debt of gratitude to Mr. H. I. Bell and Mr. T. C. Skeat for furnishing transcriptions of unpublished tax-documents in the British Museum, to Mr. H. C. Youtie for supplying excerpts from the then unpublished tax-rolls from Caranis at the University of Michigan Library, to Dr. Edmund H. Kase Jr. for permission to use his transcriptions of tax-documents in the Princeton University Library, and to Professor A. G. Laird

for a photograph of the British Museum's unpublished fragment of the customs-register in the collection of the University of Wisconsin. Mr. J. G. Tait very generously offered the use of his transcriptions of unpublished ostraca, but I was unable to go to England to take advantage of that offer; Mr. Tait, as reader for the Oxford Press, also made helpful suggestions in regard to the form and content of the first two chapters of this volume.

The references have been checked so far as the documents have been available in the Library of the University of Wisconsin. For assistance in checking these references and in reading proof I am indebted to Messrs. Eisner, Jenson, Fiedler, and the late Paul Kennett, students in the University of Wisconsin, and to my wife. Thanks are due also to Dr. F. M. H. Ould for reading parts of the manuscript. Professor William Kelly Prentice of Princeton University gave valuable suggestions for Chapters VII and VIII, which formed two chapters in the author's doctoral dissertation presented to the faculty of Princeton University.

My greatest obligation, however, is to Professor Allen Chester Johnson, who first suggested this study and whose aid and guidance were generously extended throughout the work. The special acknowledgements in the succeeding pages do not adequately represent the obligation to his helpful suggestions. He has read the entire manuscript and the proof of Chapters XVII and XVIII. Without his encouragement and assistance this volume could not have been completed. Professor Johnson, however, is not to be held responsible for matters of opinion and judgement, which are the author's own.

SHERMAN LEROY WALLACE.

MADISON, WISCONSIN

27 August 1937

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THE CADASTRE IN ROMAN EGYPT

THE conquest of Egypt made ready to Octavian's hand the great resources of the richest grain-lands of the time. The conqueror was able to exploit these resources with but few changes in the system of agricultural economy. His first task was to restore efficiency in production, which had declined under the later Ptolemies. To accomplish this the Roman army in Egypt was used to rebuild the dikes and clean the canals which had suffered from neglect. But even more important was the encouragement of the creation of estates by private individuals who would undertake to maintain land which might otherwise have become less profitable to the state.¹ To the members of the imperial family and to favourites, on the other hand, were granted estates which comprised the most fruitful land in Egypt, as is evident from the extraordinarily high rents paid by tenants on the same land after the estates had been confiscated. These large private estates, like the *δωρεαί* of the Ptolemaic period,² satisfied a temporary need and later reverted to the Roman emperors, either through inheritance or by confiscation, when they were no longer necessary to the most efficient exploitation of Egypt. Other than the creation of estates no important changes were required, for the system of land-tenure developed under the Ptolemies exactly suited the character of an imperial province. The cleruchic land of the Ptolemaic period became, within the limits of provincial law,³ private property. Practically, however, this involved but slight change in the treatment of the land by the administration of the new province, and hence there was little change in the system of taxation. In order to understand why this was so, it is necessary to consider the classification of the land, for the purposes of administering its revenue, as expressed in the cadastre.

In the Ptolemaic period legal ownership of all land in Egypt resided in the king.⁴ This conception was an inheritance from the absolute monarchy of the Pharaohs. For practical purposes of administration, however, the king upon his own terms ceded

tenure of the land to whomsoever he might wish. Consequently there are found in the records of the Ptolemaic period two great classes of land: βασιλική γῆ, domain land, and γῆ ἐν ἀφέσει, the land whose tenure was ceded to others. The γῆ ἐν ἀφέσει was further divided into ἱερατικὴ γῆ, the land of the priesthods, and κληρουχικὴ γῆ, the land assigned in allotments (κληῆροι) to various classes of soldiers. These three great divisions of the land correspond to the divisions suggested by Herodotus⁵ for an earlier period. The domain land of the Pharaohs was taken over by the Ptolemies without change. When they had attained the sovereignty of Egypt the Ptolemies found the priesthood a powerful organization in possession of a large share of the land. Although it is apparent that the Greek kings made some attempt to curb the grasping ambitions of the native priests, who had profited greatly because of the weakness of the later dynasties of the New Empire, we can believe that comparatively little change occurred in the ἱερατικὴ γῆ.⁶

In the Pharaonic category of land assigned to the warrior-class (μάχμοι) the Ptolemies made changes at the expense of the important native feudal families which had survived even the Persian conquest. In order to maintain a large standing army the first three Ptolemies assigned a κληρος of land to every soldier who agreed to till the soil and pay certain dues to the king. These allotments varied in size according to the military standing of the recipient, and the dues upon the allotments varied slightly according to the rank of the cleruchus.⁷ In the Fayûm, where land was reclaimed for the purpose, the allotments were made chiefly to the Graeco-Macedonians who were called catoeci, and their land was termed γῆ κατοικικὴ. Allotments to non-Greek and to native troops seem to have been made chiefly outside the Fayûm.⁸ The later Ptolemies made further allotments of land as the occasion arose.⁹

Domain land was leased according to its value, and the average rental paid to the crown for grain-land was between 4 and 5 artabae of wheat for each arura. The land was leased for limited periods, and the length of the lease and rate of rental were subject to change upon the individual plot of land. Upon cleruchic land, on the contrary, were levied dues or taxes¹⁰ at a fixed rate upon the arura and not subject to change, except as the rate

might be raised or lowered for the entire class of cleruchi within a nome. The tenure of these cleruchi was indefinite. It was the policy of the Ptolemies to cede κληῖροι, at least in part, from land which could not be leased profitably,¹¹ so that the rates upon cleruchic grain-land were low, apparently never exceeding 2 artabae upon the arura, and a rate even that high was not common.¹² The land of the priesthoods was sometimes free from taxes and sometimes paid at a low rate similar to that assessed on the land ceded to the cleruchi.¹³

The outlines of the system of land-tenure in Roman Egypt were fixed by Rostovtzeff in his *Studien zur Geschichte des Römischen Kolonates*.¹⁴ As conveniently restated by Wilcken¹⁵ the divisions of the land were:

1. βασιλική γῆ and δημοσία γῆ.
2. προσόδου γῆ.
3. οὐσιακὴ γῆ.
4. ἱερατικὰ ἐδάφη.
5. ἰδιωτικὴ γῆ and οὐσαίαι.
 - a. Cleruchic and catoecic land.
 - b. ιδιόκτητος and ἐωνημένη γῆ.
6. The land belonging to communities.

The βασιλικὴ γῆ was, of course, the crown-land of the Ptolemies, which was taken over by Augustus as the domain land of the province of Egypt. Δημοσία γῆ is a Roman term for domain land, and the distinction between βασιλικὴ and δημοσία γῆ is not clear;¹⁶ the τυραννικὰ ἐδάφη, probably garden-land, in P. Lond. III. 1157 (p. 61) may have been included in βασιλικὴ γῆ. Domain land was leased to tenants of the crown who were called δημόσιοι γεωργοί or more rarely βασιλικοὶ γεωργοί. Sometimes domain land was sold to private owners and was then taxed like cleruchic or other private land. The sale of this land and the collection of arrears of taxes came under the jurisdiction of the Idiologus. Probably only inferior land was sold at first, but the policy of the government may have been modified to meet changing conditions during the course of three centuries.

There is not yet agreement as to the definition of προσόδου γῆ (or προσοδικὰ ἐδάφη). It was leased like the domain land, but at a very high rental, and the tenants were called προσοδικοὶ γεωργοί.¹⁷ Collart (P. Bouriant, p. 156) suggests that this

category represents confiscated lands placed temporarily in this division until they were sold or definitely assigned to some other department of administration. Some of the *προσόδου γῆ*, however, may have been land sequestrated because dues were in arrears, its income to revert to the treasury until the exactions were fully met.

The *οὔσιακῆ γῆ* was land belonging to the *patrimonium* of the emperor. It consisted of land formerly belonging to private estates which had been inherited or confiscated by the emperors of the first century. In the second century, as early as the reign of Trajan, usiac land was leased to *οὔσιακοὶ γεωργοί* or to *δημόσιοι γεωργοί*, but it was administered in a different manner from the domain land.¹⁸

Augustus confiscated a part of the land which had belonged to the priesthoods of Egypt.¹⁹ The confiscated portion, called *ἱερά γῆ ἐν ἐκφορίῳ*, was leased like any other domain land; hence it paid rent rather than a fixed tax. The *ἱερά γῆ* (some of which may have been left in the control of the priests²⁰) distinguished as *ἐπὶ καθήκουσι* paid a tax just as it had ordinarily done during the reign of the Ptolemies.²¹ This control over the *ἱερά γῆ ἐπὶ καθήκουσι* practically amounted to legal ownership, and the owners could lease the land to their own advantage or perhaps even sell it. Land dedicated to specific gods and called *ἀνιερωμένη γῆ* was sometimes tax-free in the Ptolemaic period,²² but it is not likely that this classification of land, which continued into the Roman period,²³ retained its full privileges.

The *ἰδιωτικῆ γῆ* is the class of land which is most important for the study of the land-tax. This land, other than the great estates, consisted chiefly of cleruchic land, or in the Arsinoite nome and certain other nomes the special class of such land called catoecic. The recognition of private ownership of cleruchic land had its chief effect in that the holders of it were excused from military service under the Romans; the taxes which fell upon the cleruchic land were simply the continuation of the dues which had been assessed in the Ptolemaic period and whose rates had been determined by the military standing of the cleruchi. In many parts of Egypt the *ἰδιωτικῆ γῆ* was in the minority, especially after the *ἱερά γῆ* was in large part assimilated to the domain land, and in consequence the land-tax on private

property did not contribute so largely to the revenue in grain as did the rent from domain land. What privileges the great estates, the *οδοίαι* of private individuals, enjoyed in regard to taxation is not known with any degree of precision, and it is probable that the privileges varied with the terms upon which the emperors permitted the creation of the estates.²⁴

The *ιδιόκτητος γῆ*, confined in the Ptolemaic period to building sites and to vine- and garden-land, was a division of the *ιδιωτική γῆ*, but what bearing this had on taxation is not known.²⁵ *Γῆ ἐωνημένη* was, of course, land which had been purchased, for the state was accustomed to sell unproductive land, such as had been in the Ptolemaic period ceded as cleruchic land, and confiscated land. After such sale the land was treated as *ιδιωτική γῆ*. The *βασιλική γῆ ἐν τάξει ιδιοκτήτου ἀναγρα(φομένη)* is obviously domain land which, so far as taxation was concerned, was treated like private property; but we do not know the terms of tenure.²⁶

It is known that the corporation of the city (*οἶκος πόλεως*) of Alexandria owned property near Euhemeria in the Fayûm in the second century. This type of holding became more important in the third century after the reorganization of the municipalities in A.D. 200. In the third century land was owned by Arsinoë and by Hermopolis Magna. These cities leased such land and were responsible for the taxes due to the government of the province, just as were individuals who owned and leased private property.²⁷

Certain special categories of lands existed, but they seem to have been less important. Sequestered lands (*γεννηματογραφούμενα ὑπάρχοντα*) seem to have belonged to owners who were indebted to the fiscus. Until the obligation was discharged the property remained under the supervision of a government agent appointed by the Idilogus. If the debt remained unpaid, the property was confiscated and placed in the category of *γῆ προσόδου*.

Γῆ ὑπόλογος seems to have been land which was not included in the ordinary account of the administration in reckoning revenues. It included marginal land which was sometimes leased for a nominal sum or was sold at a low price. In P. Kalén 14. 45, however, a parcel of $1\frac{13}{32}$ arurae was assigned for forced cultivation at a rental of $4\frac{1}{5}$ artabae an arura.

A category called marsh land (*γῆ λιμνιτική*) is found in the

Delta, and such land was administered by a special department of the treasury. Part of this land was devoted to gardens and part to cereals. The rental or tax was generally low (P. Ryl. II. 213, 221; SP. XVII, p. 9).

There were two great divisions of the land of Egypt based upon the type of culture. Grain-land normally paid its tax or rent in kind, whereas vine- or garden-land paid in money. Since the change from one type of cultivation to the other meant an important change in the type of taxation and in the amount of revenue derived by the state from the land, it was necessary to obtain the permission of the government to effect such a change.²⁸

To keep an accurate record of this complex system of land-tenure was the purpose of the cadastre, the topographical register of the land of Egypt.²⁹ In the Ptolemaic period the preparation of the cadastre was the duty of the *comogrammateus*.³⁰ This official was able to furnish upon request exact information as to the area, location, and rate of rent or tax, of any piece of ground in his district by reference to this cadastre. In addition he was required to furnish an annual *ἀπολογισμὸς τοῦ ἐδάφους*, an account of the land which summarized its yield, brought up to date each year for the guidance of the financial officials of the nome.³¹ The information of the cadastre was brought up to date by an annual *ἐπίσκεψις*, an inspection which was made necessary by the change in some parts of Egypt of the area of cultivable land. This change might be comparatively large or small in any given year, and was caused chiefly by the vagaries of the Nile, which sometimes inundated a given parcel of land, or again left it high and dry, or occasionally left it too long under water. In the latter case the land might remain unfruitful because encrusted with salt. Sand-storms sometimes left the land covered with sand and so unfruitful.³² The owner or tenant of the land which so suffered made a report of the facts to the officials in order to secure a reduction in taxation or rent for the year. His report was checked by the *episcepsis*, a careful official measurement of the land in question. The result of the *episcepsis* was final and determined whether the claim for reduction of the state's assessment on the land should be allowed, in whole or in part, and the findings were duly reported to the officials concerned in the collection of the

revenues. This is precisely the system which Herodotus attributed to Sesostris:³³ 'This king, so they say, divided the land among all the Egyptians, giving to each an equal quadrangular parcel, and from this he derived his revenue by assessing an annual rent. But if the river should take away any part of the parcel of land of any man, he would come to the king and reveal what had occurred; the latter then sent men to inspect and to measure how much the land was diminished, in order that thereafter he might pay an adjusted rental.'

The same system of registration was continued into the Roman period without any significant change. There has been found but one fragment of papyrus which may fairly be called a part of the official cadastre, namely P. Kalén 13. This document is unfortunately incomplete, so that we do not know how the large outlines of the cadastre were fixed, but proceeding from the incomplete description of a given parcel of land, it describes another plot of land as 'South of these (arurae), separated by the afore-mentioned (road, &c.), $2\frac{3}{16}$ arurae of the Dionysodorian estate, paying at the rate of $\frac{7}{120}$ artabae of wheat plus $5\frac{31}{300}$ artabae of barley, through the farmer Pekusis son of Satabous and partners; it is bounded on the south by a road through the fields, on the north by a canal and the above parcel, on the east by a canal and by dry land, on the west by a ποτίστρα (a watering-trough or basin of some kind). Southwest of these (arurae), separated by the canal, are two arurae of domain land paying at the rate of two artabae of wheat, &c.' We must multiply this on the analogy of the Vatican papyrus, published by Norsa and Vitelli in *Studi e Testi*, volume LIII, in order to understand how the entire area of a village was recorded; the village areas must be united to form the toparchy, then the μερίς (subdivision of a nome), and finally the nome.³⁴ It is not certain that the bureaux of the strategus and the basilico-grammateus had a complete cadastre of the entire nome, but it is not improbable. The comogrammateus was required, however, to present summaries of the areas under cultivation in his district, so that the tax-assessments might be checked without recourse to the complete cadastre. Such summaries were ordinarily prepared after the episcepsis had taken place.³⁵

The episcepsis was conducted in the same manner during the

Roman period as under the Ptolemies. There are many examples of the ἀπογραφαί sent in by owners or tenants of land reporting the current state of their property when it (allegedly) deserved a reduction in taxation or rent.³⁶ The prefect of Egypt (and once the procurator usiacus) in an edict issued instructions for the presentation of these ἀπογραφαί. Such edicts were probably not issued annually, but only in years of exceptional condition of the Nile flood (i.e. low or late). The government did not encourage appeals, because the expense of a survey was great. The ἀπογραφαί, all from the Roman period, contain the same essential clauses, though they differ slightly in details. They are addressed to the strategus, the basilico-grammateus, and the comogrammateus;³⁷ these officials docketed the returns in the usual manner, and the comogrammateus or the πρεσβύτερος, perhaps the elder of the village peasants, was expected to make an ἐξέτασις, a preliminary investigation.³⁸ ‘The general form and content (of the ἀπογραφῆ) are as follows: According to the order of the prefect the landowner declares that his land, location given, was unflooded in the present year, usually adding “therefore I hand in the declaration”.’³⁹ If the land became less productive for any other reason, the owner was similarly expected to report the reason: the flooded land might be waterlogged, ξμβροχος, ὑφ’ ὕδωρ, καθ’ ὕδατος, or covered with sand, ἐν ἄμμω, ὕφαμμος. If there was no change in the normal productive condition of the soil no declaration was required, since no change in the rate of taxation or rent was involved, and the land was therefore called δμόλογος.⁴⁰

After the declarations were received, the comogrammateus made up a report listing the unflooded land within his district, in its relation to the flooded land, with the amounts due in taxes and rents from each category; he also gave the names of the owners or lessees of the unflooded land with the amount of rent or taxes due from each.⁴¹

This report of the comogrammateus served as the basis of the episcepsis carried out by a commission appointed for that purpose. In P. Hamb. 12 an imperial procurator is responsible for the episcepsis, and in P. Brem. 73 (= W. *Chrest.* 238) a commission of εὐσχήμονες chosen from other nomes, doubtless to secure impartiality, undertakes the task. The comogrammateus did not

have a place on this commission, for the investigation of his report served as a check on his activities as well as to determine the amount of land which could not be normally cultivated during the year. The episcepsis consisted of an exact measurement of all the land reported as *ἄβροχος*: this land was subdivided into quadrangular parcels which could be measured as integers or fractions of arurae.⁴² The commission often wrote the result of its findings upon the margins of the report of the comogrammateus,⁴³ but the members doubtless filed an official report as well. The result of the investigation usually revealed that the wily landholders had over-estimated the amount of *ἄβροχος γῆ*, and it is significant that the land reported as *ἄβροχος* was often land which paid at the higher rates of taxes or rent.⁴⁴

The report of the commission on the episcepsis was given to the comogrammateus, who adjusted the data of his cadastre accordingly. From the cadastre and from the corrections given by the report of the episcepsis were compiled the reports of the comogrammateus recording the *ὁμολογος γῆ*, the land wrongly reported as *ἄβροχος*, and the land actually *ἄβροχος*, and indicating what land could practicably be irrigated.⁴⁵ These reports were sent to the strategus and basilico-grammateus in order that the tax-lists might be compiled for the use of the collectors.⁴⁶ Summaries of these reports were made for the superior officials of the financial administration to expedite their computation of the taxes on land.⁴⁷ We know that the comogrammateus had a copy of the tax-list for his own information and guidance.⁴⁸ The same procedure is indicated for the *γραμματεῖς πόλεως* in regard to the farm-land which might be situated within their competence.⁴⁹ Copies of the tax-list, *ἀπαιτήσιμον*, as well as of the cadastre must have been preserved in the central archives of the nome.⁵⁰ Wilcken rightly supposes that a cadastre (in summary form, of course) of all Egypt was in the central archives in Alexandria at the disposal of the high officials charged with the financial administration of the province.⁵¹

So far as is known the comogrammateus was obliged to depend upon his own investigations to keep the cadastre up to date in regard to changes in ownership or tenancy of the land.⁵² Changes in ownership of *γῆ ἰδιωτικῆ* were reported to the bibliophylaces of the nome, and, after the establishment of that

special archive, to the *βιβλιοθήκη ἐγκτήσεων*. How the *comogrammateus* was informed of such changes is not precisely known, but it is obvious that the officials charged with the administration of the taxes were interested in such changes in ownership. Although it has been demonstrated that the *βιβλιοθήκη ἐγκτήσεων* had no immediate concern in the cadastre, it is probable that its records could be inspected directly or indirectly by the *comogrammateus* in order to check the information as to tenure which was contained in his cadastre.⁵³ The bibliophylaces might likewise have access to the cadastre to verify the rights of any individual to transfer a given parcel of land.⁵⁴ The cumbersome method of keeping records of transfers of property which prevailed in the *βιβλιοθήκη τῶν δημοσίων λόγων* and later in the *βιβλιοθήκη ἐγκτήσεων* necessitated general *ἀπογραφαί* from time to time at the order of the prefect.⁵⁵ There is no evidence that these general *ἀπογραφαί* occurred at regular intervals, and there has never been found any document which was certainly to be identified as an *ἀπογραφή* sent in for the information of the cadastre.⁵⁶ Hence, as we wait in vain for evidence to the contrary, it becomes clearer that the *comogrammateus* was dependent upon his own researches for the information necessary to keep his portion of the cadastre up to date in regard to tenure of land. The soil of Egypt was relatively stable as compared with the changes in the population brought about by birth and death and changes of occupation or residence. Consequently the *comogrammateus* could build more securely upon the previous records of the land without a periodic survey comparable to the census of the population which was taken every fourteen years.⁵⁷

A cadastre of the buildings erected upon the land was similarly kept by the scribes of villages and cities.⁵⁸ The ownership or tenancy of all buildings could be checked by reference to the *ἀπογραφαί κατ' οἰκίαν*, whose primary purpose was to serve the census.⁵⁹ Here, too, a general investigation called a *πεδιακή ἐπίκρισις* was necessary from time to time as a check on the ownership of houses and other buildings.⁶⁰ What tax was assessed upon the land so built over is not known, but it is known that a fee, or fine, called *πρόστιμον*, was exacted for building over land which had been subject to *ἐκφόρια*.⁶¹

II

THE LAND-TAX IN KIND

RENTS paid on domain lands were usually higher than the taxes whose rates were fixed for cleruchic or private land. Voluntary tenants on public lands paid a rental established by the provisions of their individual leases which were renewed from time to time, possibly at intervals of five years, the term stated in many of the leases. Ordinarily domain land was classified according to its worth (*κατ' ἀξίαν*), and in some cases the wording of the lease provides for a reduction of rent in case the land be un-inundated. Rents of domain land often included barley, beans, and various other products of the soil, although the most important item was almost invariably wheat. The rents were determined with care, as is shown by the minute fractions of artabae used in their calculation. Thus rents on usiac land of a village in the Fayûm were as follows (P. Ryl. II. 207): $5\frac{1}{16}$, $5\frac{1}{8}$, $5\frac{1}{12}$, 6, $6\frac{1}{20}$, $6\frac{3}{40}$, $6\frac{1}{2}$, $6\frac{5}{6}$, $6\frac{51}{60}$, $6\frac{23}{24}$, $6\frac{57}{60}$, $6\frac{109}{120}$, $7\frac{3}{8}$, and $7\frac{11}{18}$ artabae of wheat an arura. In PO. VI. 986 the following rents are recorded: $4\frac{1}{4}$, $4\frac{1}{2}$, $4\frac{171}{200}$, $4\frac{21}{75}$, $4\frac{68}{120}$, $4\frac{31}{40}$, $4\frac{73}{120}$, $4\frac{33}{40}$, $4\frac{3}{4}$, $4\frac{229}{300}$, $5\frac{7}{25}$ artabae of wheat per arura. Probably the rent in P. Lond. II. 267 (p. 129) at 7 artabae an arura is the highest known for crown-land; the average was much lower. According to P. Lond. III. 604 (pp. 70 ff.) the average rental at Crocodilopolis in a year of low flood was $1\frac{1}{3}$ artabae an arura. Hieratic land at Philadelphia pays rentals of 2, 3, and $3\frac{1}{2}$ artabae an arura in BGU. VII. 1621-2; at Theadelphia a rate of $4\frac{1}{5}$ artabae is found (PO. XII. 1446). In the Mendesian nome rates on hieratic land varied from 1 to $4\frac{1}{2}$ artabae an arura (SP. XVII, pp. 9 ff., lines 111 and 329). Usiac land was ordinarily taxed at a higher rent than crown or hieratic land. According to P. Bouriant 42 verso the rent of land on the estate formerly belonging to Lurius averaged $7\frac{5}{6}$ artabae, on that of Seneca $8\frac{1}{4}$ artabae, and on that of Germanicus $9\frac{1}{2}$ artabae, while the highest rate recorded is $14\frac{1}{3}$ artabae an arura. In P. Bouriant 42 part of the estate of Antonia is in the category of land paying at a fixed rate of taxation (*καθήκοντα*). This is the only published example of *καθήκοντα* on usiac land.

In respect to taxation private land differed from domain land chiefly in that the former paid at a fixed rate determined by the provisions of the original grant of land. We have seen that in the Ptolemaic period a frequent practice of the kings was to assign to their followers allotments (*κληῆροι*) from land which could not become profitable to the state without the expenditure of considerable labour upon it and hence could not be leased easily. The policy of Augustus and his successors was similar and greatly increased the amount of privately owned land. The concession of large tracts of land to individuals can be inferred from the long list of estates which has been compiled from references to them in the papyri.¹ Many of these estates belonged to members of the imperial family and to their favourites. The land for these grants was obtained by confiscating neglected cleruchic holdings and also *ἱερά γῆ* which had belonged to the temples.² Most of these estates, either by inheritance or by confiscation by the various emperors, came into the class of usiac land before the end of the first century after Christ.³ In the second and third centuries private ownership of land was encouraged because the development of the system of liturgies required large numbers of eligible persons having considerable property. Grants of land to private individuals were not ordinarily made gratis,⁴ but we know little about the taxation of estates after they had been acquired. The estates of the members of the imperial family enjoyed *ἀτέλεια*, either partial or complete exemption from the land-tax.⁵ The estate of Julius Asclepiades, a philosopher, likewise enjoyed *ἀτέλεια*, but that may have been because of his privileges as a philosopher.⁶ The conditions of *ἀτέλεια* (or *κουφοτέλεια*) were probably determined for individual cases by the terms of the concession of land.⁷ We do know, however, that certain private estates paid the usual taxes on garden-land,⁸ and there is little evidence for the payment of grain-taxes in kind by the estates because the majority of them were devoted to garden- and vine-culture⁹ and consequently paid their taxes in money. Practically all our information, therefore, is confined to the rates of the grain-tax on cleruchic land and on the *ἱερά γῆ ἐπὶ καθήκουσι*.

All land in Egypt devoted to raising grain apparently paid the *διχοδικία*, a tax of $\frac{1}{20}$ of an artaba of wheat to the arura.¹⁰ Grain-

land also paid the tax called *ναύβιον*, but this was a tax paid in money and levied on garden- and vine-land as well, so that it will be more convenient to consider it in connexion with the taxes on vine- and garden-land.

Private land and *ἱερά γῆ ἐπὶ καθήκουσι* almost invariably paid their land-taxes in wheat, because the revenues were used by the Roman government for the *annona civilis* for the populace at Rome, and there was comparatively little use for the barley, beans, &c., that formed a part of the revenues obtained from the rents of domain lands. The individual receipts for payment of taxes in wheat, unlike those for payment of the taxes in money, give little information concerning the rates of taxation. Most of this information comes from the *ἀπογραφαί* of *ἄβροχος γῆ* (and the like), from the surveys made on that account, and from the tax-lists.

The Arsinoite Nome

Most of the *ἰδιωτικῆ γῆ* in the Arsinoite nome consisted of the *κλήροι* which had been granted to the catoeci in the Ptolemaic period.¹¹ These continued to pay the tax of 1 artaba, *μοναρταβία κατοίκων* (with supplementary charges which will be considered in Chapter IV), throughout the Roman period.

The editors of P. Ryl. II. 202 consider the *ἰδιωτικῆ γῆ* in that document, which is designated as *μοναρταβίας* followed by the name of a village, as different from the catoecic land designated by *μοναρταβίας κατοίκων* with, or without, the name of a village. This may be correct, for the land sold from the *οὐσία Ἀντωνίας*, which could hardly be catoecic land, is taxed at 1 artaba an arura in P. Bouriant 42.

Other classes of *κλήροι*, however, existed in the Fayûm. The *κλήροι* of the *μάχμοι* in the late first century of our era¹² paid at a rate higher than $1\frac{3}{4}$ artabae to the arura, if the reasoning of the editors of P. Ryl. II. 188. 4, note, is correct.¹³ Since we have no evidence that cleruchic land ever paid at a rate higher than 2 artabae an arura, it is probable that the rate for the *μάχμοι* was 2 artabae, for *κληρουχικῆ γῆ* was very rarely assessed at odd fractions of an artaba.¹⁴ This would represent a stiff rise in the rate for this class, since in the Ptolemaic period, at least towards

the end of the second century B.C., the *ἐπτάρουροι μάχιμοι* paid at $\frac{3}{4}$ artaba an arura.¹⁵

In the same document a rate somewhere between 1 and 2 artabae is indicated for the cleruchic land of the *φυλακίται*. In 112 B.C., however, the *φυλακίται* paid at $\frac{1}{2}$ artaba per arura.¹⁶

A class of land paying at $\frac{3}{4}$ artaba is mentioned in P. Teb. II. 346, dated shortly after A.D. 16. This was the rate paid by cleruchi who had been granted 7 arurae, at least in 112 B.C. A class of land paying at 2 artabae is also mentioned.¹⁷ The rate paid on land apparently classed in this document as *λααρχίας*¹⁸ is lost.

A rate of $1\frac{1}{2}$ artabae on the arura is not infrequently found in the Arsinoite nome,¹⁹ and directions for calculating that tax and the supplementary charges are found in the gnomon or standard list of instructions for the collectors and assessors of taxes.²⁰

A rate of taxation on *ιδιωτικὴ γῆ* at $1\frac{1}{4}$ artabae ($\frac{1}{4}$ *ωσ—ad*) is found in SP. xx. 62. 10 from the Fayûm. But the recorded payment ($\overline{\text{Ϝ ρλ[.] ις λβ \frac{1}{4} ρξ}$), if complete, shows that the tax was actually collected at a rate less than $1\frac{1}{4}$ and more than $1\frac{1}{7}$ artabae an arura. The exact rate cannot be determined because part of the number of arurae is mutilated.

The rate of taxation on *γῆ ἀμπελίτις*, former vine-land which, because of the condition of the vines and soil, was no longer profitable as a vineyard, but which if irrigated might be sown with grain, was ordinarily $1\frac{1}{2}$ artabae.²¹ The only evidence for the rate on this class of land in the Arsinoite nome is doubtful, but it may have been 1 artaba an arura.²²

Ἴερά γῆ was of two kinds, *ἐν ἐκφορίῳ* which was leased by the government like the *βασιλικὴ γῆ*, and *ἐπὶ καθήκουσι* which paid a fixed tax on the arura. The rate of the tax in the Arsinoite nome may have been 1 artaba on the arura, for the land designated simply as *ἱερ(ᾶς)* in P. Teb. II. 453. 2 is probably to be regarded as *ἐπὶ καθήκουσι*, since it seems to be contrasted with that designated as *ἱερ() ἐν ἐκφο(ρίῳ)*. The rate was probably uniform throughout the nome, for there is apparently but one known exception to the rate of 1 artaba per arura on *ἱερά γῆ* in the papyri from all parts of Egypt.²³

The gnomon published in P. Teb. II, App. I, gives directions

for calculating the tax designated as ἀραβ(είας?) ι λ β, which may or may not refer to one of the classes of land listed above; the interpretation of the symbol remains obscure.²⁴

The Oxyrhynchite Nome

The normal rates for ιδιωτικὴ γῆ in the Oxyrhynchite nome were 1 artaba and $1\frac{1}{2}$ artabae on the arura.²⁵

In PO. XII. 1445 $4\frac{27}{32}$ arurae of private land paid $4\frac{17}{48}$ artabae of wheat. As the editors remark, some part of this land paid at less than the usual rate of 1 artaba on the arura. Unless some part of this land paid at more than 1 artaba (e.g. at $1\frac{1}{2}$ artabae), this would mean that 1 arura paid at $\frac{1}{2}$ artaba, while $3\frac{27}{32}$ arurae paid at the usual rate of 1 artaba (which would total $4\frac{33}{96}$ artabae as against the $4\frac{34}{96}$ artabae of the papyrus); or possibly $1\frac{15}{16}$ arurae paid at $\frac{3}{4}$ artaba, and the rest at 1 artaba. But rates of $\frac{1}{2}$ or $\frac{3}{4}$ artaba are not otherwise attested for the Oxyrhynchite nome.²⁶

The Hermopolite Nome

The ἀραβεία κατ' ἄρουραν is attested for this nome.²⁷ This implies a rate of 1 artaba on the arura, although it is possible that the term ἀραβεία may cover other rates besides 1 artaba, as Grenfell and Hunt have attempted to prove.²⁸ Nothing further is known concerning the rates on private land in this nome.

P. London II. 193 (pp. 120 ff.)

This papyrus was republished in SP. XVII, pp. 49 ff., by Martin who assigned it to Middle Egypt. It contains the following classifications of private land (all except the catoecic pay the ναύβιον ἐναφείων):

1. Catoecic at 1 artaba per arura.
2. Land designated merely by its rate of $1\frac{1}{2}$ artabae.
3. Γῆ ἀμπελίτης at $1\frac{1}{2}$ artabae.²⁹
4. Ἰδιόκτητος γῆ at $1\frac{1}{4}$ artabae.
5. Land of the μάχ(ιμοι) κλη(ροῦχοι) assessed at $\frac{3}{4}$ artaba, with which is combined a tax designated as λααρχ(ίας) συσφ() at $\frac{1}{2}$ artaba, so that land of this class paid at a total rate of $1\frac{1}{4}$ artabae on the arura.
6. Land designated by its rate of 2 artabae.

The Apollonopolite Nome

In P. Flor. III. 331 and P. Giss. 60 from this nome are found the following classifications of land:

1. Catoecic land. This forms the largest portion of private land, and presumably pays at 1 artaba.

2. Land with a rate of $1\frac{1}{12}$ artabae, which (if Kalén is right) is really assessed at 1 artaba, since the stated rate includes the *διχουικία*.³⁰

3. Land designated as *ἀδ πολ()*. It is not certain how the abbreviated word is to be restored, but all suggestions relate it to *πόλις*,³¹ so that it is evident that this land received its designation from the fact that the *κληροί* of which the land was composed had been assigned in the Ptolemaic period to citizens of Ptolemais or even of Alexandria, and paid $1\frac{1}{4}$ artabae.

4. *Γῆ ἐωνημένη*, upon which the rate is not given. It consisted presumably of confiscated *κληροί*, which had been sold, probably before the reign of Nero, in order to bring them into profitable cultivation.³²

5. Land with a rate of $\frac{11}{12}$ artaba to the arura. This is the only example of a rate of taxation at a fraction other than halves or quarters.

6. *Χ(ερσάμπελος)* at $1\frac{1}{2}$ artabae. This land has been variously interpreted as 'dry land' which, with proper irrigation and cultivation, was suitable for growing vines, and as former vine-land.³³

7. *Κολωνία*. This is interpreted as land allotted to a colony of Roman veterans.³⁴ The rate of tax on the land is not stated.

8. *Βασιλική (γῆ) ἐν τάξει ἰδιοκτῆτου ἀναγραφομένη* or *ἰδιωτικ(ῶ) δικαίῳ ἐπικρατουμένη* (crown-land administered like private land) was assessed at 1 artaba and at $1\frac{1}{2}$ artabae to the arura.³⁵

The Thebaid

From Crocodilopolis, which is presumably near Ptolemais in the Thebaid,³⁶ comes P. Lond. III. 604 (A and B, pp. 70 ff.), the report of a *comogrammateus* on the *βασιλική, ἱερά,* and *ἰδιωτικῆ γῆ* of the district within his competence.

There are but three parcels of ground which may have been

ἱερά γῆ, although the readings are uncertain.³⁷ One rate may have been the usual 1 artaba to the arura. Two parcels, which may have been temple land, pay at $\frac{1}{2}$ artaba, which is not an impossible rate for ἱερά γῆ, since that rate is attested for the Ptolemaic period.³⁸ These would presumably be the rates on ἱερά γῆ ἐπὶ καθήκουσι, although the average rent of the βασιλική γῆ was only $1\frac{1}{3}$ artabae an arura.

The following classifications of private land are obtained by combining the data of the two parts of the document:

1. Catoecic land paying at 1 artaba.
2. Land designated as α— Πολ(). Part, if not all, of such land had been ceded to citizens of Ptolemais or of Alexandria in allotments of 25 arurae.³⁹
3. Land designated as Ε— πέλζων, that is, land which had been ceded to the Ptolemaic infantry and which paid at the rate of $\frac{3}{4}$ artaba to the arura.
4. Land paying at 2 artabae an arura, but also characterized as αλλεων (or αλτεων), which the editors take as the name of a place.⁴⁰ Apparently there was but a small amount of such land in the district, $13\frac{3}{8}$ arurae divided among three owners.
5. It is possible that the land first mentioned in the document and designated as Ιδ() was different from any of the land classified above. Ιδ() may be an abbreviation for ιδιόκτητος rather than for ιδιωτική γῆ (as the editors have expanded it). The rate on such land must have been well understood, since it is not given.⁴¹ This parcel of land may, however, have belonged to one of the first three classifications in this list.

From the ostraca of the Roman period found at Thebes (as well as at Syene where little grain was raised) we learn but little concerning the rates of taxation on grain-land. O. Tait, p. 75, no. 75, designates certain land as α— ἱερα(τικῆς), which presumably indicates a rate of 1 artaba an arura on ἱερά γῆ ἐπὶ καθήκουσι. If the restoration of WO. II. 1405. 3, given in the *Berichtigungsliste*, II. 1, is correct, there is evidence for land assessed at 1 artaba an arura. Two ostraca from the late Ptolemaic period (O. Theb. 10-11) apparently indicate rates of 1 artaba and $1\frac{3}{4}$ artabae per arura; it is probable that the first rate, at least, was continued in the Roman period, since the same rate appears elsewhere in Egypt.

The Mendesian Nome

P. Mendes. Genev., published in SP. xvii, pp. 9 ff. by Martin, gives most valuable information concerning the tax on grain-land in the Delta. The *ἱερά γῆ ἐπὶ καθήκουσι* paid at the usual rate of 1 artaba an arura. Martin found the following classes of private land:

1. $a \frac{1}{6}$ *ἐναφ(εσίων)*, that is cleruchic land paying at 1 artaba to the arura.

2. *ἀπράβης* without further characterization, which Martin regarded as different from class 1, although paying at the same rate.

3. Land paying at $1\frac{1}{4}$ artabae, but without any further characterization.⁴²

4. *Χερσά(μπελος)* paying at $1\frac{1}{2}$ artabae.

5. Land of the *δεκάρουροι* paying at $\frac{3}{4}$ artaba. The *δεκάρουροι* are frequently further characterized as *Ιετηρίταις*.⁴³

6. Land of the *δεκαπεντάρουροι* paying at $\frac{3}{4}$ artaba.

7. Land of the *ἐπτάρουροι*, whose rate of payment is not given. Martin argues with great probability that the rate was $\frac{3}{4}$ artaba.

8. Land of the *ῥαβδο(φόροι)*, of which the rate has been lost.

9. There are possibly two other classes (Martin's *k* and *l*, p. 43), but the rates are uncertain.

The remarkable way in which these various classes of cleruchic land mentioned in the Mendesian papyrus at Geneva had continued to the end of the second century after Christ indicates with how little change the system of taxation on private land was taken over from the Ptolemies by the Romans. It is not surprising that, once taken over, these classifications should have persisted: they represented privileges in tenure which the landholders were only too eager to maintain. The revolts in Egypt which began as early as the first years of the rule of Augustus apparently taught the Roman administrators that it was more important to maintain the existing system of grain revenues at a high point of efficiency than to attempt to change the assessments to a uniformly higher rate. The salient features of the system are as follows. The *ἱερά γῆ ἐπὶ καθήκουσι*, with but one known exception and that doubtful, was assessed at 1 artaba of wheat an arura. The majority of cleruchic land,

including the catoecic whose rate seems never to have varied, was also assessed at 1 artaba. Former vine-land everywhere, except possibly in the Arsinoite nome, was assessed at $1\frac{1}{2}$ artabae. Rates of $\frac{3}{4}$, $1\frac{1}{4}$, $1\frac{1}{2}$, and 2 artabae on cleruchic land are not infrequently found, but there does not seem to be uniformity among the various nomes in the method of assessment upon the different classes of cleruchi.

Partial or total remission of the tax on private grain-land may have been allowed because of impossibility or difficulty of cultivation caused by the vagaries of the inundation of the Nile, but there is no evidence as to the amount or the specific conditions of such remission.⁴⁴

We have little evidence for changes in the rates of the grain-tax during the Roman period. Certain rates on cleruchic land were higher in the first and second centuries after Christ than the rates attested for the same classes of land towards the close of the second century B.C.,⁴⁵ but it is more likely that the rise in rates came during the unhappy rule of the Ptolemies in the first century B.C. than that the Roman administration changed the existing rates. In PO. VII. 1044, dated A.D. 173-4 or 205-6, land designated as 'one artaba' land actually pays at the rate of $1\frac{1}{8}$ artabae to the arura; this may represent a temporary or permanent rise in the assessment or an inclusion of some supplementary tax, but nothing is known of a similar assessment elsewhere in Egypt. We have no satisfactory evidence for the third century, when we know that the rates on garden-land were raised.⁴⁶ Aurelian boasted that he had added an ounce to the loaves of bread for the city of Rome and that he got this from the revenues of Egypt, but his own words state only that he had improved the transportation on the Nile and on the Tiber.⁴⁷ It is possible that he raised the assessment on the grain-land of Egypt, but it is also possible that the increase in the revenue was made feasible by the improvement in the system of irrigation which Vopiscus implies was carried out at that time.⁴⁸ These isolated and dubious instances are too little upon which to conclude that there was an increase in the assessments of the grain-tax for all Egypt, and as Milne has aptly said, ⁴⁹ 'The actual taxes remained practically unaltered in name, scope, and incidence' until the age of Diocletian.

III

FURTHER OBLIGATIONS IN KIND

IT has often been pointed out that, since the intense cultivation of Egypt was dependent upon irrigation from an elaborate system of dikes and canals, complete exploitation of the arable land required a constant warfare against the unfavourable turns of nature which broke down dikes during inundations and also silted up canals, and against the indifference of the oppressed fellahîn who, when not closely watched, permitted the system of irrigation to fall into decay. Extensive civil disturbances always caused a shrinkage in the area of cultivation, and when such outbreaks had been suppressed the government was obliged to make special efforts to restore the cultivated land to its previous extent. In spite of its efforts the government sometimes failed to obtain voluntary tenants for heavily assessed domain land. Involuntary cultivation of domain land was the answer to the problem, for the Ptolemies and the Pharaohs before them had proved its efficacy. By the Roman administration in Egypt this involuntary cultivation was enforced in two ways, one called *ἐπιβολή* and the other *ἐπιμερισμός*.

Ἐπιβολή

By the *ἐπιβολή*, frequently called *ἐπιβολή κώμης*, small sections of domain land assessed at the usual high rate of rental were assigned for cultivation to the owners of private land. In the Arsinoite nome such assignments fell often upon the holders of catoecic land.¹ O. Mich. 24, presumably from the Fayûm and dated in the second century, records an *ἐπιβολή* on hieratic land, and to this is added a unique *ἱερά ἐπιβολή* almost a half larger. No principles for the incidence of such *ἐπιβολαί* have been deduced from our sources; but it is probable that the *ἐπιβολή* was somewhat like a liturgy, in that theoretically the larger allotments were assigned to those better able to undertake the cultivation of additional land. It is uncertain whether the *ἐπιβολή* was permanent or imposed only for a limited period of time; but it clearly was an obligation attached to the land with

which it was transferred whether by lease, sale, or inheritance. That this burden was unwelcome is revealed by the clauses in conveyances which guarantee that the land is free from *ἐπιβολαί*.

The additions of domain land to various classes of landholdings at Ptolemais in the Thebaid were probably similar to the *ἐπιβολή κώμης*, although they are listed under the heading *πλεονασμῶν βασιλικῆς γῆς* in P. Lond. III. 604B (p. 76), line 54. The land in the Mendesian nome denoted by the term *χάλασμα* (in SP. XVII, pp. 13 ff.) seems to have been land similarly added to private holdings.²

Ἐπιμερισμός

The *ἐπιμερισμός* was organized in a somewhat different manner. When a large proportion of the domain land of a certain town could not be leased in the ordinary way, the officials of the town were directed to divide up the land among the *δημόσιοι γεωργοί* of the town and to see that the rents were paid therefor. If, because of unfavourable local conditions, the cultivators of the town were unable to assume so large a burden, the area in question might be divided among several near-by villages, whose cultivators became responsible for a share of the *ἐκφόρια* upon the land so assigned.³ Such an obligation was not permanent. The *ἐπιμερισμός* was perhaps at first intended to fall only upon the *δημόσιοι γεωργοί*, who were able to cultivate such assignments of land with a minimum of difficulty because they were organized in guilds. It appears, however, from the conveyances of private land that the *ἐπιμερισμός* of domain land had fallen also upon the holders of private land, since the guarantee-clauses of such conveyances state that the land is free from *ἐπιμερισμοί*.

An *ἐπιμερισμός* of land in another village must have been a considerable nuisance to the cultivators who had to make arrangements to leave their own land, upon which the usual obligations in rent or taxes were due, or else sub-lease the *γῆ ἐπιμερισθεῖσα* to some one who could more conveniently care for it. It is perhaps from the *ἐπιμερισμοί* that most of the payments for *διάφορον φορέτρον* arise.⁴

The *ἐπιβολή* and *ἐπιμερισμός* were two of the drastic measures taken by the Roman government to ensure the cultivation of domain land which found no voluntary lessees. The precedent

for such action was found in the involuntary lease of the Ptolemaic period.⁵ In spite of these steps the revenues in grain were constantly falling into arrear for various reasons, such as desertion of the tenants, inaccurate assessments, incompetence or peculation of officials, and unforeseen calamities. Although strenuous efforts were made to enforce the collection of arrears, the revenue in grain often did not meet the demands made upon it.

Πυρὸς συναγοραστικός

One of the methods used by the Roman government to meet increased demands was the forced sale of grain termed *πυρὸς* (or *κριθὴ*) *συναγοραστικός*. Certain cultivators were compelled to sell a part of their crop remaining (*ἐπιγένημα*) after the payment of taxes at a price set by the government. Such grain was delivered by the cultivators to the state granary, where a separate account of it was kept by the *sitologi*.⁶ Such a forced sale was a hardship, and every effort was made by the great landholders to keep their names off the list of cultivators liable to sell grain *εἰς συναγοραστικόν*.⁷ It is thus evident that this forced sale was a liturgy falling upon landholders and was not a tax whose incidence was fixed upon the *arura*.⁸

It is probable that the grain so purchased by the government was used chiefly for the subsistence of the army in Egypt.⁹ In P. Thunell I *verso* and 4 the amounts of *πυρὸς συναγοραστικός* are insignificant in comparison with the total receipts of revenue grain, so that it is improbable that the Roman government was engaged in the purchase of grain in Egypt for distribution at Rome. P. Lond. II. 301 (p. 256), however, has a reference to *πυρὸς συναγοραστικός* shipped to Alexandria, the port of export to Rome, but it is not certain that the purchased wheat formed the whole shipload or that it was not intended for the garrison stationed near Alexandria. It is probable that the government resorted to the forced sale of grain whenever the price of grain rose in the open market to such an extent that the soldiers stationed in Egypt could not afford to purchase it. The great majority of references to forced sale of grain come from the reigns of Antoninus Pius, Marcus Aurelius, and Commodus. It is noteworthy that in P. Goodspeed Cairo 30 *πυρὸς συναγοραστικός* is mentioned in an account which gives such high prices

for the sale of wheat in the open market that a serious shortage in Egypt seems indicated.

Ἄννωνη

Little is known concerning the method of obtaining supplies for the Egyptian legions before the end of the second century. Lesquier¹⁰ has, with reason, held that the requisitions were made upon the various districts of Egypt in a manner analogous to that employed to maintain the entourage of princes and prefects during their journeys through Egypt.

As early as A.D. 185, however, the *annona* was organized in a more regular fashion, particularly the *annona* of grain which became a surtax in kind levied upon grain-land. It was collected in such small quantities, however, that it seems to have been used only for the legions stationed in Egypt or in the immediate vicinity. Thus the *άννωνη* of Egyptian tax-documents corresponds to the *annona militaris* as distinguished from the *annona urbis*. Wheat and barley were the grains usually levied for the *annona* in Egypt. In BGU. I. 336, from Heraclia and dated A.D. 216, a receipt is given by the *sitologi* for 19 $\frac{5}{8}$ artabae of wheat paid as tax on *catoecic* land, and in addition there were paid for the *annona* 2 $\frac{1}{2}$ artabae of wheat and 2 artabae of barley. Later special collectors of the *annona* are found, in A.D. 253 an *ἀπαιτητῆς άννωνῆς* and about A.D. 265 *ἐπιμεληταί*.¹¹ *Ἀπαιτηταί κριθῆς κυριακῆς* are found in Garrett Deposit 7669 (in Princeton University Library), a receipt dated in A.D. 217 but whose provenience is not known; the 'imperial barley' was probably intended for the *annona* of the soldiers. In Garrett Deposit 7687b, from the Oxyrhynchite nome and dated A.D. 255, 100 drachmae are paid to the *ἀπαιτητῆς* of the western toparchy for the *άννωνη στρατιωτῶν*.

Vinegar (*ὄξος*) and wine (*οἶνος*) were also demanded for the *annona*.¹² Various other articles were requisitioned for the soldiers' maintenance, but they are hardly to be considered as taxes in kind on land. In PSI. VI. 683, from the Arsinoite nome and dated A.D. 199, steers, calves, goats, and hay are mentioned. This mutilated document is a copy of a communication sent by the epistrategus to the strategi of the Arsinoite nome asking that the strategi furnish a list of available supplies to be found in each

village of the nome under their jurisdiction, so that the requisitions could be equably divided (*ἐπιμερίζειν*) among the various districts of the nome.

Since it was easier to transport money than supplies in kind, it was often permitted that the annona in kind be commuted for a payment of money. An account found at Tebtynis and dated late in the third century records amounts in staters and drachmae paid toward the annona of grain (*σῦτος* = wheat?), barley, cattle, kids, and pigs.¹³ Occasionally receipts for such commuted payments are phrased *ὑπὲρ τιμῆς οἴνου εἰς λόγον ἀννώνης*, *ὑπ(ἐρ) τι(μῆς) κρ(ιθῆς) ἀνό(νης)*, *ὑπ(ἐρ) τι(μῆς) χόρ(του) ἱεράς ἀννώνης*, or the like.¹⁴ Such payments were collected by the ordinary collectors of money-taxes, the *πράκτορες ἀργυρικῶν*. Because of the similarity of phrasing, other receipts beginning *ὑπὲρ τιμῆς* have been associated with the annona. Some of these receipts are earlier than any extant mention of the annona in Egypt, and consequently doubt has been cast upon the connexion of some of them with the annona.¹⁵ Receipts for *τιμὴ πυροῦ*, for example, are found from 16 B.C. to A.D. 265, but it is unlikely that all of these are to be related to the annona. The editors of PO. XII. 1419, dated A.D. 265, suggested that *τιμὴ πυροῦ* in that document meant the ordinary land-tax.

In WO. II. 1264 the phrase *ὑπ(ἐρ) τι(μῆς) οἴν(ου) γενήματος κββ* is followed by several letters of which the reading is doubtful. Wilcken first read them as *εἰς ἀπόμοι(ραν)*, then as *εἰς ἀννών(ην)*. The *Berichtigungsliste*, II. 1, asserted that both readings were unsatisfactory. Wilcken is now reported (O. Wilb.-Brk. 40-2 introd.) to have returned to his earlier reading *εἰς ἀπόμοι(ραν)*, so that it is probable that *τιμὴ οἴνου* in this receipt is equivalent to the *ἀπόμοιρα* on vine-land. Payments *ὑπὲρ τιμῆς οἴνου* are attested in receipts from A.D. 90 to late in the third century. At Thebes there were *ἐπιτηρηταὶ τιμῆς οἴνου καὶ φοινίκων*. Receipts for *τιμὴ φοινίκων* are found frequently at Elephantine-Syene. Strabo states that an island in the Thebais afforded the best dates in Egypt, and that the revenue therefrom had belonged to the kings, but in Roman times was a perquisite of the prefects. It is probable that the island was Elephantine, and the receipts for *τιμὴ φοινίκων* from Elephantine-Syene may well represent the collection of the prefect's revenue.¹⁶

Receipts *ὑπὲρ τιμῆς λαχάνου* and *τιμῆς χλωρῶν* have also been found, but it is not at all certain that they are to be connected with the *annona*.¹⁷

Jouguet has pointed out that immediately after the organization of the municipalities throughout Egypt (in A.D. 200) the assessment of the *annona* became one of the duties of the municipal senates.¹⁸

Ἀχυρικά

The compulsory delivery of straw was a practice which must have dated back into Pharaonic times. Most of the receipts of the Ptolemaic and Roman periods have been found near Thebes. Some receipts for straw state that it was to be used for the making of brick, but its employment for that purpose must have decreased after the Romans introduced the use of burnt brick.¹⁹ Some collection of straw was made for the fuel of public baths,²⁰ but the majority of the receipts are for straw delivered to divisions of the Roman army to be used as fuel for baths maintained for the soldiers.²¹ The straw was also used for bedding and fodder for the horses of the cavalry and for the pack-animals.²² Milne has pointed out that the receipts for chaff in the first century were normally given by soldiers, while those of the second century are signed by *ἀχυροπράκτορες* or *ἀχυραίοι* or *ἀπαιτηταί* (or *παραλήμπται*) *ἀχύρου*.²³ The 'elders of the village' at Socnopaei Nesus were required to supply the gymnasiarch with chaff for the gymnasium in that village in the second century, but it is not certain that this requisition was levied as a tax.²⁴ Mention of payments of chaff to the army are found in Lower Egypt only in documents from the end of the third and from the fourth century.²⁵ It is possible that reimbursement was made for chaff requisitioned for the use of the army, at least in the first and second centuries, although the government probably set a price agreeable to itself. In P. Lond. III. 1212 (p. 90), dated A.D. 255, the payment of chaff seems definitely to be a tax.

Γράστις

The meaning of the tax *γράστις* (grass) is not clear. Grenfell and Hunt suggested that it might have been exacted for providing better seed in government issues.²⁶ The tax is rarely found

in Roman times.²⁷ A collection made by *ἀπαιτηταί* may, like the collections of chaff, have been for military purposes.²⁸

Special Assessments

The Roman government sometimes felt obliged to levy special taxes in kind upon both domain and private land. Real emergencies may have dictated some of these special levies, but others were probably caused by the extravagance of officials or of rulers like Elagabalus. Various terms were used to indicate such special levies, but it is not always possible to see wherein the tax designated by one term differs from another.

Ἐπίθεμα

Ἐπίθεμα appears as an interlinear note in a list of lands cultivated by *δημόσιοι γεωργοί* and the payments of the rents thereon in P. Teb. II. 576. The fragmentary nature of the document makes it impossible to determine the incidence of the tax which was paid in 14–13 B.C.

Ἐπικλασμός

The term *ἐπικλασμός* was used to designate an extraordinary levy on land, whether in money or in kind. It may have been used loosely to indicate taxes which had other names. In the petition of Apollonarion (PO. VI. 899) the appellant seeks on the score of her sex to be released from the responsibility of cultivating various plots of crown-land in the Oxyrhynchite nome. She states that she had cultivated the land until the *ἐπικλασμοί* ordered by the prefect Aemilius Saturninus had proved too great a burden. Since the document is to be dated in A.D. 200, it is possible that the *ἐπικλασμοί* include the extraordinary levies of the crown-tax (*στεφανικόν*), which was a money-tax, as was the *ἐπικλασμός* in the Mendesian nome mentioned in PSI. I. 105. 20, dated in the second half of the second century. The *ἐπικλασμός* in kind levied on domain land is attested in the reign of Trajan (P. Teb. II. 373). Payment of *φόρετρα* on an *ἐπικλασμός* assessed in kind is mentioned in P. Teb. II. 470; since the document is dated one or two years after P. Teb. II. 373 this *ἐπικλασμός* may be the same as that on domain land. *Ἐπικλασμοί*

are mentioned in leases and conveyances of catoecic and other private land from A.D. 180 to 298.²⁹

'Επιμερισμός

The term *ἐπιμερισμός* likewise was applied to both money-taxes and taxes in kind.³⁰ The same term was also applied to the *annona* and other requisitions of supplies for the soldiers for which, at least in some cases, payment was made by the government.³¹ Most of the references to *ἐπιμερισμοί* occur in the guarantee-clauses of conveyances and leases, dated from A.D. 139 (?) through the fourth century. The only account of the *ἐπιμερισμός* in kind is in P. Col. I R 6, dated in the reign of Hadrian or of Antoninus. The citizens of Theadelphia subject to the *ἐπιμερισμοί σιτικοί* were obliged each to pay $2\frac{13}{24}$ artabae of wheat, $\frac{13}{24}$ artaba of barley, and $\frac{19}{24}$ artaba of lentils. Wheat might be substituted for the lentils. It is not known what the occasion of these *ἐπιμερισμοί σιτικοί* may have been.

'Επνέμησις

A payment of $17\frac{1}{2}$ artabae of wheat occurs for the *ἐπνέμησις* in BGU. VII. 1610, where it is said to be 'on account' (*ἐπὶ λόγου*). Other payments of 9 and $8\frac{1}{2}$ artabae follow. In the preceding portion of the receipt occurs a payment on private land (*ἰδιωτικῆ γῆ*) possessed by the wife of the payer; the amount was $19\frac{1}{4}$ artabae. The receipt was issued in A.D. 259 by the *decemprimi*. The only other reference to *ἐπνέμησις* in the third century known to me is in SP. V. 127. II R IV. 11, where the phrase *ἀρχιονηλάται Κουσσων ὑπὲρ ἐπνεμήσεως Κουσσων* is followed by 140 drachmae. It seems to refer to the assessment of a money-tax. Elsewhere in the papyri the term seems to be used as equivalent to *indictio*.

'Επίτριτον

The name of this tax would indicate that, at least in origin, it was a surtax of one-third. The *ἐπίτριτον* paid in money is known also, but most of the references are to a surtax paid in kind.³² The tax was sometimes collected on catoecic land at Tebtynis and, if the restoration of P. Teb. II. 482 is correct, was connected

with the *γεωμετρία* (land-measurement). In P. Teb. II. 561 an artaba of wheat was paid for the *ἐπίτριτον κατοίκων*. In P. Teb. II. 363 $\frac{1}{8}$ artaba of wheat for *ἐπίτριτον* followed the payment of $\frac{1}{8}$ artaba for *φόρετρον* on *ἱερὰ γῆ* for which $4\frac{5}{8}$ artabae had been paid as tax: the *ἐπίτριτον*, as the editors remark, is not nearly one-third of any of the amounts there recorded. The tax was collected also in the Ptolemaic period.

Μερισμός

O. Strass. 578 records the payment of $\frac{1}{24}$ (presumably of an artaba) for *μερισ(μοῦ) λαχά(νου)*, and perhaps also for [*μερισμοῦ*] *κρι(θῆς)*.

Πρόσθεμα

This obviously means a surtax, and it was paid in kind, usually in wheat, but occasionally in beans.³³ In the Roman period this term is confined to receipts from Thebes. Preisigke³⁴ has suggested that the *πρόσθεμα* was a fee charged for the use of the tax-collector's account at the public granary, i.e. his *θέμα*, but this is very doubtful. *Adaeratio* of the *πρόσθεμα* is occasionally recorded.³⁵ The occasion for these extraordinary assessments is not known: the only dated examples occur in successive years, A.D. 130-1 and 131-2 and 190-1 and 191-2.³⁶

Miscellaneous Taxes in Kind

Payments for *ἀναμέτρ(ησις)* in P. Bouriant 40 are perhaps for a charge imposed to meet the expense of an official survey, though Kalén suggests a charge for inspection of unflooded land.³⁷

The *βαλανικόν* (bath-tax) was collected in kind at Thebes, apparently for the maintenance of baths owned by the temples.³⁸

The *ἕκτον* (tax of one-sixth) was imposed on *γῆ ὑπόλογος*. The editors of P. Ryl. II. 221 suggested this tax might be a form of the *προσμετρούμενα* which were collected at the rate of one-sixth on taxes in kind on private land; but in SB. 4325 the amount collected is not a sixth of the principal tax nor does it bear any obvious relation to the amount of the principal tax or to the number of arurae, so that the nature of the tax is problematical.

A payment of 55 artabae of wheat for *ἐπιστατικόν* is found in

P. Bouriant 42. It may be a fee for administrative officials, perhaps those in charge of the transport of grain.³⁹

An item of $3\frac{5}{4}$ artabae of wheat, with *προσμετρούμενα*, is recorded as paid for *κατακ(ρίματα)* in P. Teb. II. 363. Fines paid in kind are rare, and it is impossible to determine from the document whether this fine was imposed in connexion with the land-tax, although that seems probable.

A payment for *σύνταξις εἰς Ἰσεω* is found in P. Kalén 3 and another *εἰς φιλ() Ἀφροδ()* in P. Fay. 81. These payments seem to have been accepted by the state for the subvention of the temples of these deities. Perhaps certain lands were designated to provide the annual *syntaxis*,⁴⁰ but the explanation is still uncertain.

The rare tax called *τελωνικὴ ἀτέλεια* was occasionally paid in kind.⁴¹

A tax paid in kind on building-sites is found in PO. VII. 1044, where 3 choenices (once 6 choenices) is paid on each plot (*οἰκοπ(έδου)*). The tax was ordinarily paid in money, if this tax is identical with the impost *προσόδ(ων) οἰκοπ(έδων)*.

Palm-fibre (*σεβεννία*) was furnished to the army by the villages, and in SP. XXII. 137 an *ἐπιμερισμός* is mentioned (just as for the annona).⁴² Dates and bundles of palm-leaves were also delivered in kind, perhaps for the army.⁴³ Aromatic nuts (*μυροβάλανοι*) were delivered in kind at Elephantine-Syene, and the tax was apparently a third of the yield.⁴⁴ Olive-oil was also paid in kind in P. Iand. 142; P. Lond. III. 1170 (p. 93). Payments in kind of clothing and the like were liturgies falling upon guilds of workmen, or assumed by the senates of the municipalities after A.D. 200.⁴⁵

In BGU. I. 217 land is taxed at the rate of $\frac{1}{12}$ or $\frac{1}{24}$ artaba of wheat or $\frac{1}{8}$ or $\frac{1}{12}$ artaba of barley an arura. This seems obviously to indicate a surtax of some kind, but it is impossible to identify it with any certainty.

The majority of the special levies in kind, as well as in money, occurred in the reign of Trajan or in the period from Marcus Aurelius through the first half of the third century. It was in these periods that the great military campaigns of the emperors placed a severe drain upon the resources of the Roman empire,

and the civil disturbances of the third century were the cause of extra demands upon the production of Egypt. These extra levies in kind were, perhaps, a more serious burden than those in money, for the latter were offset in part by the higher prices caused by the continued depreciation of the currency in the second half of the second century and in the third century.

IV

COLLECTION OF THE GRAIN-TAX

PHILO called Egypt the greatest of the possessions of the emperor of Rome.¹ Nowhere is the special character of this imperial province more clearly shown than in the absolute power of the emperor to levy taxes. We are informed by the edict of Tiberius Julius Alexander² that the prefect of Egypt, although representative of the emperor in charge of the financial administration of Egypt, had little legal power to effect changes in the assessment of taxes. The power to raise, lower, or grant exemption from taxes lay with the emperor alone: the power of the prefect was confined to carrying out the regulations of his imperial master, and to him the conscientious prefect referred all major questions concerning taxation.³ In regard to the taxation of Egypt a *bon mot* attributed to the emperor Tiberius is famous.⁴ When Aemilius Rectus, prefect of Egypt, had forwarded revenues in excess of what had been specified, the emperor sent word that he required his sheep to be sheared, not flayed! From this statement it has been supposed that the revenue to be derived from Egypt was fixed annually by the emperor.⁵ Recently, however, it has been shown that important modifications in the assessment of taxes might be made at the time when the prefect published his general edict, at intervals of approximately five years.⁶ Moreover, the revenue in grain was subject to modification from factors beyond the control of even the emperor of Rome.

Assessment

As is evident from the preceding chapter the grain-tax on private land was determined by the category to which the land belonged, and the owners of that land paid accordingly at from $\frac{3}{4}$ to 2 artabae an arura. The rent of domain land, on the other hand, was determined by the provisions of the lease granted by the state to the tenant. The maximum revenue in grain to be derived from Egypt was, therefore, fixed at the time of renewing leases of domain land. The *Epitome* of Aurelius

Victor I states that in the time of Augustus twenty million modii of grain were sent to Rome annually from Egypt for the *cura annonae*. We may accept this as the amount of revenue in grain normally expected from Egypt.⁷ This probably did not represent a one hundred per cent. collection of the rents and taxes, for arrears constantly accumulated in spite of the vigilance and perseverance of the collectors. Furthermore, in years when there was a low Nile or an excessively high inundation it follows that this amount was substantially decreased, since the reports of un-inundated or of water-logged land were sent to the officials in order to gain a reduction in the assessment of taxes or in the rent due to the state.⁸ An approximate estimate of the size of the crop for the ensuing year could be made, without awaiting compilations of the reports of un-inundated land, by referring to the height of the inundation of the Nile recorded on the Nilometer at Elephantine, and Strabo informs us that this measurement was used by the prefects of Egypt to estimate the revenue in grain (*προσόδων χάριν*).⁹ Since the inundation is usually at its height by the 1st of August,¹⁰ it is probable that the estimate of the grain revenue for the ensuing year would be in Rome by the 1st of December at the latest. The purpose of this estimate was not so much to enable the emperor to fix the amount of grain to be derived from Egypt as to indicate about how much he could expect during the coming year, so that the *praefectus annonae* could regulate the import from the other provinces accordingly.¹¹

The edict of Tiberius Julius Alexander implies that the annual assessment of taxes was made by the *ἐκλογισταί*. These officials, one for each nome, had their offices in Alexandria, where they received the reports of the collectors of taxes in kind and in money; and it was their duty to check the reports against the tax-lists to determine whether the demands of the state had been met.¹² Since P. Mey. 3 indicates that the eclogistes had reported a shortage in the account of a single tenant of the imperial estates, it is evident that he had, or could obtain, a completely detailed account of every individual's obligations to the state. It is improbable, however, that the eclogistes in Alexandria often visited the nome under his supervision,¹³ and it is consequently unlikely that he superintended the making of the

ἀπαιτήσιμον κατ' ἄνδρα, the detailed tax-list for a given district. The material for the compilation of such tax-lists was collected by the *comogrammateus* and was forwarded by him to the *strategus* and the *basilico-grammateus*.¹⁴ It is possible that the actual calculation of the taxes or rent owed by an individual on his holding was made by subordinates of the *eclogistes*, the *γραμματεῖς* and *βοηθοί* in the *λογιστήρια*, in accordance with a *gnomon* such as that in P. Teb. II, App. I. From the cadastral reports of the *comogrammateus* and from the *gnomon* was made up the annual *ἀπαιτήσιμον κατ' ἄνδρα*.¹⁵ It was the duty of the *eclogistes*, I believe, to verify the assessments from duplicate copies sent to him, and to compute from them the total revenues due from the various districts and from the entire nome. The commission charged with the receipt and forwarding of reports to the *eclogistes* and to the *Idiologus*¹⁶ perhaps served a useful function by classifying and simplifying the information actually transmitted to Alexandria.

The decree of Tiberius Julius Alexander informs us that the *eclogistae* during the terms of certain of his predecessors had lined their pockets by neglecting the reports of the inundation of the Nile and assessing the taxes according to the average of the previous years.¹⁷ The normal taxes had consequently to be wrung from the suffering farmers despite the shortage caused by the low Nile, while the actual amounts of revenue in grain delivered (at Alexandria) under the supervision of the *eclogistae* corresponded to the decreased assessment for the province based upon the estimate obtained by the prefect from the Nilometer and checked against the reports of un-inundated (or of water-logged) land.

Collection of Grain-taxes

The *ἀπαιτήσιμον κατ' ἄνδρα* for the tenants of the domain land at Socnopaei Nesus was displayed in public by the order of the *epistrategus* in the third century after Christ.¹⁸ It is probable that the similar *ἀπαιτήσιμον κατ' ἄνδρα* for the taxes on private land was also posted, and that this had been customary during the previous centuries. As soon as the grain was harvested (April to June, depending upon the district) it was brought to the village threshing-floors. The owner of private land was obliged

to transport his sheaves by whatever means he had or could obtain. The use of the government's pack-animals, however, was available to tenants of domain land who had no animals of their own, and for this service a fee called *δραγματηγία* (transport of sheaves) was assessed. It is not known whether the cultivator of a small plot of private land, who had no pack-animals of his own, could likewise make use of the government transport, for there is no record of payments for *δραγματηγία* by cultivators other than tenants of domain lands.¹⁹ In Theadelphia in A.D. 158-9 this tax was assessed upon the arura, but it is not impossible that the assessment was made in some other manner if circumstances were different.²⁰

At the village threshing-floors, located if possible on land which was conveniently situated near the edge of a village and which was not suitable for cultivation, the *ἀπαίτησις* took place. Representatives of the government were present when the grain was threshed,²¹ and at Oxyrhynchus in the third century the cultivator was not permitted to remove his grain from the threshing-floor until the government's share for taxes or rent had been reserved.²² The elders of the village, who in this function succeeded the Ptolemaic elders of the cultivators, supported or represented the cultivator to see that the division was made fairly.²³ The reservation of the state's share of the grain at the threshing-floor was not designed to prevent concealment of the grain, as was the case in Sicily where the tithe was collected, but to make sure that the grain paid for taxes and rent was of first quality. Since the threshing-floors were often situated on unleased domain land, it was natural that some fee should have been exacted for the use of the threshing-floor, and 2 artabae of wheat seem to have been paid by a certain Petheus for that purpose (*άλωνία*) early in the first century after Christ in the Fayûm.²⁴ But evidence for such payments is so rare that it is impossible to determine whether the practice was continued and to learn the incidence of such a fee.²⁵

The cultivator was also responsible for the removal of the revenue-grain from the threshing-floor to the granary. The use of the government pack-trains was available to the tenants of domain land, and a tax called *σακκηγία* (transport of sacks) was exacted from them to cover the cost.²⁶ Again, however, as

in the case of the tax *δραγματηγία*, there is no evidence that this charge was paid by owners of private land.²⁷

Receipt at the Granary

To store its revenues in grain the state was compelled to place a granary in the centre of every community of any importance. Several small villages, however, might be grouped together for the purpose of administering the grain revenue. The granaries (*θησαυροί*) of small villages were not suitable for storage of large quantities over a long period of time, and consequently the grain was removed from such places to large central granaries in the important towns where the seed-grain could be stored until the next planting and whence the government transport-trains could remove the revenue grain to the harbours for shipment to Alexandria. Such central granaries had in the Ptolemaic period been designated as *ἐργαστήρια*, but although that term seems to have dropped out of use in the Roman period the system continued.²⁸ Such central granaries were located in the metropolis of the Fayûm and also in Theadelphia, Caranis, Tebtynis, Apias, and Nilopolis.²⁹ Concerning other nomes we are not so well informed, but there seems ordinarily to have been a central *θησαυρός* in the metropolis of each nome.³⁰ At Thebes, whose great distance from Alexandria made elaborate provision for storage of grain necessary, there was a *θησαυρός τῆς διοικήσεως*, a *θησαυρός τῶν ἱερῶν*, a *θησαυρός κωμῶν*, and a *θησαυρός μητροπόλεως*; in addition there was a granary in most, if not all, of the various quarters and suburbs of the city (Charax, South Quarter, South-West Quarter, Market Quarter, Ceramia, Island, Memnonia).³¹

Upon delivery of the revenue grain at a state granary a receipt was issued to the cultivator or to his representative³² by the official in charge of the granary, i. e. the *sitologus* or one of his assistants.³³ This receipt (of which many examples are extant) does not ordinarily specify the rate of taxation, but it frequently states that the payment is for *catoecic*, *cleruchic*, *hieratic*, or *domain land*, or for a combination of these.³⁴ The receipt gives the total amount of grain paid for taxes and occasionally specifies the additional amounts collected for the *προσμετρούμενα* (*surtaxes*) and for various additional charges. When the culti-

vator had received his receipt at the granary his specific duties in regard to the revenue grain had been discharged.

The Administration of the Granaries

The granaries belonging to the state were in charge of sitologi. One or more of these officials was assigned to each granary according to its size and importance. There seems, moreover, to have been a hierarchy of sitologi, in which those in charge of small granaries were responsible to the sitologi of the large central granaries. The large granaries received the grain forwarded by the sitologi of the small local granaries. Calderini has advanced the hypothesis that there was a regular progression in the rank of these officials, beginning with the sitologus of the village, then the sitologus of the toparchy, then of the *μερίς*, and finally of the nome.³⁵ It is probable, however, that changing conditions in various localities modified such a progression in the hierarchy of sitologi. At Thebes, for example, there were *σιτολόγοι ἱερατικῶν* (O. Br.-Berl. 6).

The sitologi were aided in the performance of their duties by *γραμματεῖς* (secretaries) and *βοηθοί* (assistants), who doubtless were more or less numerous according to the importance of the granary and to the size of the district within the competence of the individual sitologus or college of sitologi.³⁶ It is not unlikely that additional employees were added to the staff of the sitologus at the time of harvest. *Φροντισταί* (representatives whose duties are uncertain) of sitologi appear.³⁷ Connected with the granaries were numerous other functionaries, doubtless subordinates of the sitologi, whose titles indicate but do not define their duties. *Σιτοπαράλημπται* (receivers of grain) are found in papyri of the second to fourth centuries; they act as assistants and perhaps secretaries of the sitologi, and Oertel has conjectured that they were special officials in charge of the collection of grain for the military annona, but who were sometimes assigned to the bureaux of the sitologi.³⁸ A *σίτου ἀποδέκτης* is mentioned in connexion with the receipt of grain in WO. 1217 from Thebes, dated in the third century; this official is otherwise known only in the fourth century. In the third and fourth centuries reference is made to *ἐπισφραγισταί* whose duty was to place an official seal upon the grain in storage in the state granary. *Θησαυροφύλακες* guarded

the granaries in the Roman period as they had during the reign of the Ptolemies.³⁹ *Σιτομέτραι* (grain-measurers) are mentioned in connexion with the granaries of the metropoleis of the nomes, but not in the *χωρά*. Kalén has demonstrated that a *σιτομέτρης* was also engaged as *σακκοφόρος* (sack-carrier) in the transfer of grain from the granary to the transport-ships.⁴⁰ An *ἐγμετρητής* also is attested for Hermopolis in A.D. 186.⁴¹

Sitologi are found as the receivers of revenue grain in the Ptolemaic, Roman, and Byzantine periods, but during the second half of the third century their functions were taken over by the *δεκάπρωτοι* (decemprimi), who apparently conducted the collection in the same manner as had the sitologi.⁴² The sitologi superintended not only the measurement of grain as brought to the granary and the issuing of receipts for it, but also the disbursement of grain to be transported to Alexandria, of seed-grain, and of grain issued as a remuneration of the government's employees and for similar purposes. They kept an account of receipts and disbursements by means of day-books, and they issued reports every ten days, every month, and annually to the strategus and the basilico-grammateus.⁴³ Copies of the monthly reports were forwarded to the eclogistes and to the Idiologus in Alexandria through the commission appointed for that purpose.⁴⁴ The reports of the sitologi were made in detail (*κατ' ἄνδρα*) and also as summaries (*μηνιαῖος ἐν κεφαλαίῳ*).⁴⁵ From these reports it is apparent how carefully the sitologus distinguished the receipts on account of taxes on private land from those for rent on domain land, and further how the surtaxes and additional charges were carefully recorded in making up the total of receipts.

The sitologi received and disbursed not only grain (wheat and barley) but also beans and lentils, sesame and croton, and other products in kind that formed part of the rent of domain land.⁴⁶ The vast majority of receipts, however, record the delivery of wheat and barley.

The collection of arrears of taxes and rents in kind was a serious problem. The sitologi were assisted in this by the *πράκτορες σιτικῶν* who were probably chiefly engaged in getting in over-due payments. It is possible that the *κατακρίματα* (fines) collected in kind were penalties for failure to pay taxes or rents

in grain when due. Many were the complaints of the ruthlessness and brutality of the *πράκτορες σιτικῶν* and the *sitologi* in forcing the payment of rents and taxes. In BGU. II. 515 one Syrus son of Syrion makes a formal complaint to the centurion Ammonius Paternus because of the outrage committed by the *πράκτορες σιτικῶν*. He and his brother had paid all their dues in grain except 1 artaba of wheat, but while he was away in the field the collectors had come to his home and had seized his mother's cloak and had beaten the old lady so that she had become bed-ridden. But these excesses were probably often provoked by the devices used by cultivators to avoid paying their dues.⁴⁷

Surtaxes on Taxes in Kind

A surtax, called *προσμετρούμενα* (or occasionally *τὰ ἐπόμενα*), is prescribed in the *gnomon* for taxation of land in the Arsinoite nome.⁴⁸ This supplement was to be collected on the total of the tax on catoecic land (or other private land) and the *dichoenicia*. The *προσμετρούμενα* on payments of rent on domain land made in wheat were assessed at the rate of one-seventh in the Arsinoite nome. These surtaxes appear as early as the reign of Augustus and were apparently established at that time. The purpose of these surtaxes has recently been discussed by Kalén, who believes that they were caused by differences in content of the standards of measures used in the assessment of taxes and rents in the Arsinoite nome. He believes that a still different measure was used for the receipt of wheat at the granary. The *προσμετρούμενα*, therefore, would represent the difference between the local standard and that which the government used in accepting payments. According to Kalén's view, the surtax on the tax on catoecic land was actually no addition to the assessment, since the artaba of 40 choinices in which the tax was levied in the Ptolemaic period was one-sixth larger than the artaba measure used for measuring receipts at the granary. The *προσμετρούμενα* on domain land, however, represented a real increase in the rent, since the standard of measure used at the granary for receipt of wheat was larger than that employed in the assessment of rents in the Ptolemaic period; but the addition perhaps absorbed the various extra charges for the 'one twenty-fourth',

τριχονικόν, θησαυροφυλακικόν, and the like, which had been added to the rent on domain land in the Ptolemaic period, but which do not appear in Roman times.⁴⁹

A surtax was charged on rent paid in barley, but the principle upon which it was assessed is not clear, for, as Kalén has shown, the supplement varies from a ratio of 1:3.92 to 1:6.45. Lentils and beans also were subject to *προσμετρούμενα*, and the ratios vary from 1:4.17 to 1:4.29.⁵⁰

The *προσμετρούμενα*, where preserved in the records of nomes other than the Arsinoite nome, are calculated in percentages rather than in simple fractions of $\frac{1}{8}$ and $\frac{1}{7}$, as Kalén has pointed out.⁵¹ He has observed that there may be a reference to this practice in CPR. I. 243 (= W. *Chrest.* 367) where the rent of subleased οὐσιακὴ γῆ is given (σὺν ταῖς) ἐθίμοις ἑκατοσταῖς. Furthermore, it appears that outside the Fayûm domain land and cleruchic land often paid *προσμετρούμενα* at the same rate. This clearly indicates that the problem is different from that presented by the surtaxes of the Arsinoite nome. According to the readings of Kalén for P. Giss. 60⁵² the rate of surtax on cleruchic land at Naboö in the Apollonopolite nome was 15 per cent. with an additional charge of $\frac{1}{2}$ per cent. On some classes of domain land this extra $\frac{1}{2}$ per cent may have been included in the rates for *προσμετρούμενα* of 15 $\frac{1}{2}$ per cent., 12 $\frac{1}{2}$ per cent., and 16 $\frac{1}{2}$ per cent.⁵³ At Thebes the rate on 1-artaba land in WO. II. 1405 was 15 per cent. or 15 $\frac{1}{2}$ per cent.⁵⁴ At Oxyrhynchus the *προσμετρούμενα* were 15 per cent on both private land and domain land in PO. XII. 1445. In PO. XII. 1528 (A.D. 266-7) two payments for the surtax at 12 per cent. are recorded. The variation in the rates of *προσμετρούμενα* in the same nome may be the result of the inclusion or omission of some of the small surcharges which are discussed below.⁵⁵

In repayments of seed-loans the supplementary tax in wheat is approximately a sixteenth of the total and in barley about a seventh.⁵⁶ The total repaid included interest on the loan, which might be as high as 50 per cent. (ἡμόλια) for the year.⁵⁷ These supplements are apparently called τὰ ἐπόμεια in PO. VII. 1031.

There is no proof that fees for cleaning and sifting of revenue grain were collected in the Roman period, although an official

ὁ ἐπὶ τῆς καθάρσεως τοῦ δημοσίου πυροῦ is mentioned in P. Fay. 23a. ii (second century). Payments for κο() appear in a few documents from Upper and Lower Egypt, but it is not certain that the abbreviation should be expanded κο(σκινευτικόν).⁵⁸ Rather, as Kalén has pointed out,⁵⁹ it was required that revenue grain be delivered clean (καθαρός) at the granary or even at the threshing-floor. Perhaps a fee or penalty for κο(σκινευτικόν) was imposed when a cultivator delivered unclean grain.

The monthly summaries of the sitologi keep an account of payments of πόδωμα (a storage-charge of some kind, possibly a penalty, although the purpose is never stated). At Oxyrhynchus the tax was 2 per cent. and was called διαρταβία. Further supplements of 1 per cent. and $\frac{1}{2}$ per cent., however, were made upon the διαρταβία.⁶⁰ At Tebtynis in the Arsinoite nome the same method of calculation was used.⁶¹ At Theadelphia, however, the πόδωμα was calculated as a 2 per cent. charge plus a charge of one ten-thousandth, and upon the total of these two charges a further exaction of 1 per cent. was made.⁶² The results of the two systems of calculation are approximately the same. In BGU. III. 897-8 payments for πο() appear following small payments on land. The abbreviation is perhaps to be expanded πό(δωμα), although the payment for πο() is $\frac{2}{13}$ of the preceding sum, and this is a ratio which bears no apparent relation to the methods of calculation at Oxyrhynchus and Tebtynis and at Theadelphia.⁶³ Two entries indicate a half of this rate πο() τὸ (ἡμισυ). In BGU. III. 977, which may be from the Mendesian nome, a ἡμιαρταβία ποδώματος is found and is evidently a tax of $\frac{1}{2}$ per cent., but it is uncertain whether this was the only charge made for that tax. In the Hermopolite nome the sitologi collected an extra charge of 1 per cent. on wheat and $1\frac{1}{2}$ per cent. on barley, but it is not certain that these charges were for πόδωμα.⁶⁴

In the gnomon for calculating the taxes on catocic land a charge of $1\frac{1}{2}$ per cent. was added to the total of land-tax, dichoenicia, and surtax (προσμετρούμενα). Kalén has suggested that this $1\frac{1}{2}$ per cent. represents a tax of $\frac{1}{2}$ per cent., called ἐνοίκιον θησαυροῦ in P. Teb. II. 520, and a perquisite of 1 per cent. for the sitologus.⁶⁵ So closely connected is this $\frac{1}{2}$ per cent. for 'rent of space in the granary' with the 1 per cent. perquisite