## . SERVANTS OF INDIA SOCIETY'S LIBRARY, POONA 4

Cl. No.

Date of release for loan

Ac. No. 41468

This book should be returned on or before the date last mentioned below.

Failure to comply will involve cancellation of the Borrower's Card and forfeiture of deposit.

2 9 SEP 1962		
1 9 SEP 1963 KI 5 HAY 1967 5 JUN 1967		
1 4 JUL 1961	i i	
2 6 AUG 1967 2 1 001 1967		
2 5 NOV 1967		
6 APR 1968 . 2 2 AUG 1968		
		<u> </u>

## THEODOR BRINKMANN'S ECONOMICS OF THE FARM BUSINESS

# THEODOR BRINKMANN'S ECONOMICS OF THE FARM BUSINESS



#### ENGLISH EDITION

WITH INTRODUCTION AND NOTES BY

ELIZABETH TUCKER BENEDICT HEINRICH HERMANN STIPPLER AND MURRAY REED BENEDICT

UNIVERSITY OF CALIFORNIA PRESS
BERKELEY, CALIFORNIA
1935

# SOCIAL SCIENCE RESEARCH COUNCIL ADVISORY COMMITTEE ON SOCIAL AND ECONOMIC RESEARCH IN AGRICULTURE Translation Series, No. 2

University of California Press Berkeley, California

CAMBRIDGE UNIVERSITY PRESS
LONDON, ENGLAND

×9J:8 65 41468

PRINTED IN THE UNITED STATES OF AMERICA BY SAMUEL T. FARQUHAE, UNIVERSITY PRINTER

#### PREFACE

HE WRITINGS OF TWO MEN, Friedrich Aereboe and Theodor Brinkmann, have been especially representative of the best modern German thinking concerning the problems of agricultural economics, especially the problems of farm management. They represent an approach and point of view with which American students have not been widely familiar. Aereboe's treatment of this subject is best set forth in his Allgemeine landwirtschaftliche Betriebslehre. A briefer treatment covering much of the same ground is presented by Theodor Brinkmann in Grundriss der Sozialökonomik, VII Abteilung, under the title "Die Oekonomik des landwirtschaftlichen Betriebes." As vet conditions and sale possibilities have not seemed to warrant publishing a translation of so extensive a work as Aereboe's Betriebslehre. As a means of bringing the German point of view more generally to the attention of American students of farm economics, a translation of the briefer treatment by Brinkmann has, however, seemed a more practical undertaking.

Through the interest and encouragement given by a former student of Professor Brinkmann's, Dr. Kurt Schneider, Mrs. Benedict in 1929 undertook this translation chiefly as a pastime. Its completion was prevented by her death early in 1930. Even before that time it had become evident that accurate handling of parts of the subject-matter would necessitate consultation with someone intimately acquainted with German agricultural practices and sufficiently familiar with German scientific literature to deal with some of the unusual terms and expressions used in the original. Moreover, it appeared that this very difficulty of making a clear and accurate translation would enhance its usefulness. It was also felt that, inasmuch as the majority of American students of farm management have not been very familiar with German writings on the subject, the bringing of the German point of view more definitely to their attention might stimulate a more effective exchange of ideas between students in the two countries.

Director H. R. Tolley, of the Giannini Foundation of Agricultural Economics, became interested in the project and made arrangements whereby Mr. Heinrich Stippler, formerly a student

ii PREFACE

under Friedrich Aereboe, could assist in completing the translation. Mr. Stippler's intimate knowledge of German conditions and of the language has made possible the clarification of many passages which would otherwise have been obscure or inaccurate.

In offering this edition to English-speaking students of farm management, the translators are acutely aware of the inability of any translation to convey all the shades of meaning which the original possesses. It is our hope, however, that the meaning as worked out after careful discussion and numerous revisions will be clearer than the original would be to persons who do not read German very freely.

The aim has been to keep as close to the text of the original as could be done practically, but in many passages entirely literal translations would distort the meaning. Careful students of the subject will no doubt wish to turn to the original, particularly in connection with such phases as the treatment of the Law of the Minimum and the Law of Diminishing Increments.

Special acknowledgment is due for the encouragement and assistance given by Director Tolley. Besides making the necessary arrangements for Mr. Stippler's services, he has assisted in a careful final reading and revision of the copy, contributing many helpful suggestions for better wording and clearer statement.

Professor J. D. Black, as chairman of the Social Science Research Council's Advisory Committee on Social and Economic Research in Agriculture, has aided greatly in making the arrangements with Professor Brinkmann and his publishers for the authorization to print the English edition. The Social Science Research Council's subcommittee on translations has also been helpful. This committee consists of Dr. L. C. Grav. Dr. C. J. Galpin, and Miss Mary G. Lacy. We wish also to acknowledge the generous service performed by Professor Joseph Schumpeter in facilitating the arrangements with Professor Brinkmann and his publishers. Also, we wish to commend the spirit of cooperation shown by Professor Brinkmann and by his publisher, J. C. B. Mohr, in authorizing a limited edition of this translation without royalty. Without the ready cooperation of these various people, it would not have been possible to bring out this edition. M. R. B.

### CONTENTS

PAGE
Editor's Introduction
Literature x
CHAPTER I
General Consideration of the Types of Farming
GENERAL CONSIDERATION OF THE TYPES OF FARMING
CHAPTER II
THE LEVELS OF INTENSITY IN AGRICULTURAL PRODUCTION AND THE ORIENTATION OF ITS LOCATION
1. Margins of Profitableness and Factors of Intensity 7
2. The Economic Location of Farms as a Factor of Intensity 11
3. The Natural Location of Farms as a Factor of Intensity 27
4. Changes in the Intensity of Farming under the Influence of a Pro-
gressing Economic Development
5. The Personal Qualities of the Agricultural Entrepreneur as a
Factor of Intensity
CHAPTER III
Systems of Farming or the Orientation of the Locations of the Lines of Production
1. General Consideration of the Origin of Farming Systems 61
2. The Interrelationships between the Enterprises on the Farm or the Necessity for Diversification of Its Production 62
3. The Adjustment of Production to the Economic Locations of Farms (the Zones of Thünen)
4. Adjustment of the Location of Production to the Natural Condi-
tions of Farms
5. Influence of the Farmer's Personal Qualities upon the Location of Production
<ol> <li>The Position of the Processing Enterprises, especially Live Stock, on the Farm, and Their Locational Orientation</li></ol>
7. Shifts in the Location of Production with Progressing Economic
Development
INDEX

#### EDITOR'S INTRODUCTION

SIGMUND VON FRAUENDORFER in 1928 presented to agricultural economists an able and understanding discussion of the "Development, Methods, and Results of Agricultural Economics Research in the United States." This treatment, which on the whole is a very accurate one, indicates the very limited extent to which American students of farm management have drawn from either the general field of economic theory or foreign works on farm management. In fact, the influence of the German discussions of this subject, which have been the most extensive of any outside the United States, is practically nil. On the other hand, a study of the writings by German students of farm management, up to very recent years, will indicate a similar lack of contact with the procedures which were being developed in the United States. The strikingly different approaches to very similar problems suggest that considerable advantage may come from a freer interchange of views between the two countries.

The following comments by Frauendorfer point to interesting differences in point of view:

A characteristic of American research activity is respect for the accomplished fact and a predilection for its expression by means of figures. The American cannot easily be surpassed in untiring accumulation of data and in their skillful, clear presentation. That is shown particularly in the surveys and cost of production studies of the earlier days, which often carried too far the zeal for descriptive statistical material, and neglected the solution of the question of causes...

The American, on the other hand, does little deductive work. There is not one of the agricultural economic works that can be compared in any way with Aereboe's Betriebslehre. That is no depreciation of analogous American works. It only directs attention to the difference in the intellectual attitude; on the German side an intuitive grasp of truth and never-failing sense for systematic arrangement; on the American side a collection of constructive details, all keenly observed and well described, which, nevertheless, does not present a very convincing picture. The German observer of American work is, therefore, more impressed by the detailed studies of an analytical nature than by handbooks and textbooks, of which there are many. The latter have a too pronounced

<sup>&</sup>lt;sup>1</sup> Written for and published in *Berichte über Landwirtschaft* (Berlin, 1928), vol. 7. (Also published in English in the *Journal of Farm Economics*, July, 1928.)

didactic character—at least to the German taste—and that may bias judgment, perhaps unjustly, against American works.<sup>2</sup>

The method of approach followed by both Aereboe and Brinkmann, like that of Alfred Weber, is a development and refinement in the use of those analytical tools which are most generally associated with the name of Thünen.<sup>3</sup>

These methods represent a refinement of Thünen similar to that which Marshall made of Mill and Ricardo, or the more detailed analysis of monetary and credit theory which R. G. Hawtrey built on Marshall's treatment of the same subject. In no textbook in the English language do we find as careful separation and identification of the elements that affect the combination of enterprises and the levels of farming intensity as are to be found in some of the German writings on the subject. The nearest approaches to this in the English language are J. D. Black's Introduction to Production Economics and C. L. Holmes's Economics of Farm Organization and Management.

The deficiencies of such theories as Justus von Liebig's "Law of the Minimum," for example, have been recognized by many American economists but have seldom been discussed in print. Brinkmann deals with this in a vigorous and understanding way, bringing out its limitations in the light of the relationships expressed in the "Law of Diminishing Increments." In nearly all the American writing on the subject, intensity of farming has been considered in an extremely abstract form. Brinkmann's treatment still is in

<sup>&</sup>lt;sup>2</sup> A. M. Hanney's translation of Sigmund von Frauendorfer, "Development, Methods, and Results of Agricultural Economic Research in the United States," *Journal of Farm Economics*, July, 1928, pp. 308–309.

<sup>&</sup>lt;sup>8</sup> Some aspects of Aereboe's point of view and approach to farm management problems are well discussed in the article by Heinrich Stippler, "Philosophy of Aereboe as Related to Scope and Method of Research in Farm Management," Journal of Farm Economics, October, 1931, pp. 597-604. See also G. P. Minnemann's translation appearing under the title, "Graphic Presentation of Thünen's Theory of Intensity," of an article by Richard Krzymowski, ibid., October, 1928, pp. 461-482; "German Approach to Farm Economic Investigations," by Immanuel Fauser, ibid., July, 1926, pp. 289-297; "Farm Budgeting in Germany," by Walter J. Roth, ibid., October, 1929, pp. 623-632.

<sup>&</sup>lt;sup>4</sup> See, for example, T. N. Carver, The Distribution of Wealth (New York, Macmillan, 1926), Chap. II; J. D. Black, Introduction to Production Economics (New York, Henry Holt & Co., 1926), Chaps. XI and XII; and H. C. Taylor, Agricultural Economics (New York, Macmillan, 1919), Chap. XIII.

abstract form but it brings the discussion much closer to reality than do most of the American writings. One of the most interesting phases of Brinkmann's analysis is his treatment of the nature of the competitive relationships among farm enterprises. In few writings has this had the careful and almost quantitative treatment which he gives to it. He has dealt with the elusive problem of opportunities sacrificed in a way that should meet with little criticism and which is at the same time lucid and stimulating. Not<sup>5</sup> only the principles of opportunity cost but those of comparative advantage are used without the wearying process of attempts at abstract definition, and, further, without resort either to Davenport's way of presenting them or to Marshall's use of the substitution method.

Type-of-farming studies have made some little progress in the United States, but as yet are almost wholly in the descriptive stage. Brinkmann's treatment of this phase of farm management is suggestive and stimulating, and points the way to a possible inductive development of the dynamics of comparative advantage. Such studies thus far have shown relatively little attempt to explain either the reasons for the existing farm types or to indicate the probable direction of future change. An explanation cannot, of course, be worked out on the relatively simple bases indicated in Brinkmann's analysis, at least not through the use of actual mileages in considering the effects of location. It is possible, however, that fuller treatment of these relationships may be possible through the use of transportation costs rather than of distances and through more careful analysis of the physical similarities and differences of competing areas.

Serious attempts to apply the methods of analyzing farm types outlined by Brinkmann will inevitably raise some very interesting points in respect to policies affecting agricultural production. These methods seem to imply, however, the possibility of a scientific basis for study of certain phases of agricultural policy—a basis which has been much lacking in that new and rapidly developing

<sup>&</sup>lt;sup>5</sup> A different approach to these problems and one which may be of interest for comparison is to be found in the two articles by M. R. Benedict, "The Opportunity Cost Basis of the Substitution Method in Farm Management," Journal of Farm Economics, July and October, 1932.

field of agricultural economics. The principles discussed in this brief theoretical treatment must, of course, be carried considerably farther if they are to provide the working tools for analysis of the complex relationships encountered in agricultural production. Nevertheless, such a background of theory is a much needed foundation for a well balanced use of the various specific research procedures which have been developed.

Like the methods of analysis which Alfred Weber has developed in his Theory of the Location of Industries, this will not be found an easy approach to apply to the locational relationships of agricultural production in the United States where other factors than economic distances play so large a rôle; where racial differences, climatic variations, soil conditions, and sizes of the business unit, are such significant elements in the problem, and where freightrate structures have developed along lines very different from those which have been characteristic of Germany as well as of many other European countries.

One of the surprising features of Aereboe's and Brinkmann's treatment of these problems, as compared with the writings of many other German students, is the relatively small recognition of the effects of historical development on existing types of agriculture. This is, to be sure, recognized in the latter part of Brinkmann's treatment where he deals with dynamic aspects of the problem, but even there it is not fully developed. How much of the present form of agricultural production and of the present type of business unit are the result of the particular way in which the land of the United States was taken up or to the peculiar racial relationships which grew out of the era of slavery is an interesting phase of the background of farming types, and has so far had relatively little careful analysis. In Brinkmann's analysis, as in most American writings, this is not much considered. A higher degree of mobility and flexibility in agricultural relationships than actually exists is assumed. In this respect the treatment suggests much more the assumed mobility and atomic nature of economics, which are characteristic of the English classical and neo-classical writers.

<sup>&</sup>lt;sup>6</sup> English edition, with Introduction and Notes, by Carl J. Friedrich (University of Chicago Press, 1929).

than the American ways of dealing with these problems where, except in the strictly abstract discussions, the possibility of systematizing existing conditions along rather rigid lines is probably given too much weight. That the German writers have a contribution to make to American thinking in these respects seems evident.

Professor Brinkmann's treatise is not a new work, nor does it now accord wholly with his present views. It is some twenty years old. (The manuscript was delivered in 1912 to Professor Max Weber of Heidelberg, and was published in 1914 as a special publication. Not until 1922 did it appear in *Grundriss der Sozialökonomik*.) The author states that, although his desire to help in bringing together American and German agricultural knowledge overcame any prejudice he might have had against a translation, he nevertheless regards the treatment as a "beginner's work," of which no one is a sterner critic than himself. American readers will be interested to know, however, that the *Oekonomik* has appeared also in the Russian and Japanese languages.

Professor Brinkmann makes the following comment: "No one can be more firmly convinced than I that a synthesis of American and German thought is very well suited to promote knowledge of the nature of agriculture." If the present small venture in making more available to American readers this source of ideas and methodology serves to stimulate them to further study of the German writers, its purpose will have been served.

MURRAY R. BENEDICT

#### LITERATURE

THE VERY EXTENSIVE LITERATURE dealing with farm management consists mainly of presentations which not only are largely descriptive but often are obsolete as well (descriptions of farming systems, etc.). Little attention has been given to theoretical analysis and explanation of cause and effect relationships. The Isolierte Staat, by Joh. H. von Thünen (III edition, 1875), is basic from the standpoint of theory. In addition to this, so far as older scientists are concerned, the works of Ad. Krämer are of great value, especially the "Grundlagen und die Einrichtung des landwirtschaftlichen Betriebes," published in Goltz's Handbuch der gesamten Landwirtschaft (Tübingen, 1890). Fr. Aereboe has recently furthered the theoretical knowledge of the subject in a pioneering way. Especially worth mentioning among his books are: Beiträge zur Wirtschaftslehre des Landbaues (Berlin, 1905); an article in Volume I of the Thünen-Archives on "Ursachen und Formen Wechselnder Betriebsintensität in der Landwirtschaft:" and Die Taxation von Landgütern und Grundstücken (Berlin, 1912). Fr. Waterstradt and G. Laur have also tried to do justice to the theory of the subject, the former in his Wirtschaftslehre des Landbaues (Stuttgart, 1912), the latter in a very extensive work, Grundlagen und Methoden der Bewertung, Buchhaltung, und Kalkulation in der Landwirtschaft (Berlin, 1911). The discussion in the following pages draws upon Thünen and Aereboe. The author has also acquired valuable ideas from the work of Alfred Weber, Über den Standort der Industrien (Tübingen, 1909).

## INDEX

Aereboe crop rotation, 67 indirect natural factors of pro-	Competitive position of areas as af- fected by technical improve- ments, 45-47
duction, 110	Concentrates—
limit of sheep enterprise, 142	as influencing location of livestock
main and supplementary feed crops, 76	enterprises, 137–142 value of, as fertilizer, 136 f.
problem of the farmer, 76	Consumption—
purpose of livestock enterprises, 128	increase in per capita, affecting intensity of farming, 33-36
sheep in competition with cattle in utilizing feeds, 140 f.	of beef and pork in Saxony, 1835- 1906, 146
Agriculture—	shifts in, affecting agricultural
and industry, division of labor be- tween, 157	production, 146 f. See also Demand
as affected by shifts in consump- tion, 146 f.	Conversion technique, achievements of, and their effects, 154
characteristics of, in contrast to	Converting enterprises—
other business, 158	and branches of land use, interde-
fundamental factors affecting, 79	pendence of, 118
normal procedure of development	problems in organization of, 123
of, 48	producing only salable products,
progress, motive for, 52	160–163
Parkhous rationalism in America	special characteristics of, 118 their separation from the farm and
Backhaus, rationalism in America, 159 f.	its effect, 162 f.
Bread grains, market price of, in re-	See also Processing; Refining
lation to meat, 146 f.	Coöperative—
Brinkmann—	creameries, 162
competition in fresh milk produc-	marketing, 153
tion for cities, 49	sugar factories, 162
coöperative slaughterhouses in	Costs—
Denmark, 162	direct, and land rent, 104
Butter production—	of marketing, a function of dis-
influences of changes in technique, 156	tance and kind of transporta- tion, 11
profitableness, 132	of marketing, as influenced by
By-products, utilization of, through feeding, 99	value and weight of products, 80 production, as affected by increase in market price 24.5
Conital	in market price, 34 f.  See also Expenses; Expenditures
Capital— invested in improvements, 42	Crisis in agriculture, 48
limited, of the farmer, 58	Crop—
substitution of, for labor, 41	combination and rotation in land
Capitalism, spirit of, 55	utilization, 66 f.
Cattle enterprise in competition with	rotation for labor distribution, 65
other livestock enterprises, 142	Cropping—
See also Livestock enterprises	continuous, 66
Climate as influencing land utiliza-	system as influencing livestock en
tion, 29 f.	terprises, 130

Crops— "certain" and "uncertain," 115	Economic— location of production, principles
commercial, shifts in production of, 148	of, 89 man in contrast to practical man.
competition between, 78	49
fertility-producing, 70	Enterprises—
"indirect" effects of, 68 f. land requirements of, in regard to	or branches of the farm organiza- tion, 4 f.
distance to market, 86	relationship of, 76-78
secondary or intermediate, 22 stubble, 22	separation of, from the farm unit, 158 f.
See also Land use	technical, in agriculture, 160-163
David rationalism in America 150 f	Entrepreneur—
David, rationalism in America, 159 f. Demand—	ability, 56 basic economic conceptions of, 55
changing, motive for shifts in pro-	capital strength of, 56
duction, 144	economic mobility of, 56
gradation of, according to urgency,	material resources, 115 f.
144 f. in relation to location of produc-	noneconomic considerations of, 55 personal qualities of, 79
tion, 101	professional and mental ability of,
increase in, influencing intensity of	111–115
farming, 34	two groups of activities, 17 f.
summary of shifts due to changes in, 149 f.	Entrepreneurial— ability, demand on, 54
See also Consumption	class, spirit of, 55
Development—	Expenditures—
of agriculture, normal procedure of, 48	behavior of, in relation to increase of intensity, 18
gradations in, concurrent and con- secutive, 51	difference in increase of rational rate of, 17
Differentiation, forces of, 61	for technical improvements, be-
Diminishing—	havior of, 39 f.  See also Costs
rate of increase in return, law of, 7 f.	Expenses of production—
return, law of, 63 See also Law of	as affected by increase in market price, 34 f.
Displacement of farm enterprises, conditions facilitating, 158 f.	market and farm share of, 34 f. See also Costs; Expenditures
Diversification—	Extensification, forces of, 62
as affected by nature, 110 f.	Extensity—
necessity for, 62-78	incorrect, results of, 16
Diversity of land use for labor distri-	"relative," 57
bution, 65	Extensive farming, definition of, 1
Division of labor, nature of, in regard to agriculture, 158	Factors of production-
Dynamic	Factors of production— optimum interrelationship of, 38
conditions in agriculture, 142-162	timing of the use of, 64
conditions influencing lines of pro-	Fallow—
duction, 78-99 considerations of technical im-	crops (Brachkulturen), 23 f.
provements, 42 f.	reduction of, 148 substitutes, 23
factors of intensity, 33	See also Summer fallow

Farm business—	replacement theory, 24-26
aim of, 7	theory of restoration of, 71
progress in, 59	Fertilizer—
stability of, 59	commercial, 69 f.
Farm organization-	demand for, 69
as differentiated by lines of pro-	farm, 69 f.
duction, 6	need for, influencing extent of
theory and practice in solving	livestock enterprises, 130
problems of, 119 f.	production on the farm, considera-
Farm products, consumable or sala-	tions in defining limits of, 129
ble, 117	transfer through livestock, 128
Farming systems as a means of dif-	use of, as influenced by economic
ferentiating types of farm or-	factors, 26 f.
ganization, 3-5	Fertilizer economy—
Feed—	at varying distances from market
base, expansion of, 133	99
crop production, importance of	function of livestock enterprises
meadows in, 109	in the, 127-129
crops, main and supplementary, 76	Fertilizers—
production, 73 f.	commercial, in relation to plant
value, classifications under, 129	requirements, 131
value, economic, 137	prices of, 131
Feeding—	Fertilizing value of—
summer and winter, 74	concentrates, 136
value (economic sense), 124	farm products, increase in, through
Feeds—	livestock, 128
absolute, in regard to livestock, 140	Financial situation of the farmer,
utilization of absolute, 123	considerations of, 58
balance of, for economic reasons,	Frederick the Great, interest of, in
123 f.	mulberry production, 153 f.
basic, formula for the return from,	Freight rates, differential, 153
133 f. "hw-foods !! 140	
"by-feeds," 140	Genius, rare inventive, in farming,
commercial, 124 concentrated, 133	60
decrease in feed value of basic, 139	Goal of agricultural entrepreneur-
facultative, 124	ship, 7-9
mixed rations of, 74	Goltz, Von der, dye plants in Thur-
profitableness of feeding concen-	ingia, 154
trated, 133 f.	Grain—
quantity relationship of utiliza-	crops, shifts in production of, 148
tion, 123 f.	production, competition in, 44
starch value of, 134	Green manure, 72
utilization of absolute and by-	Gross return in determining produc-
feeds, 140	tivity of soil, 100
utilization of farm-produced feeds	
through concentrates, 133	Increasing costs, law of, 63
"Feldgrasssystem" and "Feldgrass-	See also Law of
wirtschaft," 5 n.	Index of land rent, 87-90, 152
Fertility—	savings in transportation costs,
-consuming types of cultivation, 70	85–90
economy on the farm, 69-74	Industrial technique, progress in, as
of soil, maintenance through live-	affecting agriculture, 145
stock, 127 f.	Industry and agriculture, division of
-producing types of cultivation, 70	labor between, 157
- · · · · · · · · · · · · · · · · · · ·	•

Initiative, individual, as influenced	progress in transport development,
by economic location, 53	154 f.
Input—	transportation costs, 80
marginal, 8	See also Thünen, Von; Zones
of effort, principle of least, 100 f.	Tailat
Inputs—	Joint—
behavior of, with reference to	products, 98
possibility of increase in in-	use of means of production, 63
tensity, 39	Kellner, feed rations, 138
coördination of, 39	men, recu rations, 100
limit of, 7	Labor—
Integration—	and capital, requirements of crops
forces of, 61–63	for, 19
nature as a factor of, 110 f.	distribution as facilitated by
Intensification, forces of, 62	summer fallow, 65
Intensity—	distribution in relation to crop
	rotation, 65
degree of, as a means of differen-	
tiating types of farm organiza-	division of, 40
tion, 2 f.	-extensive crops, independence of,
degree of, definition, 1	64
degree of, formula, 3	human, costs, 40 f.
differentiation in forms of, 17	human, difference between, and
dynamic factors of, 33	other production goods, 12
factors determining degree of, 7	-intensive crops, independence of,
factors of, 50	64
factors of differentiation in, 10	nature of division of, 158
forms of increasing, 20	requirements of small farms, 114 f.
horizontal differentiation of de-	substitution of, for capital, 41
grees of, 36	Lambl, the "goal of all farm opera-
increases in, through better qual-	tions," 9
ity, 60	Land—
limits of, in regard to quality of	capital value of, 16
soil, 32	change (Umlage), 23
nature of variations of, with dif-	Land rent—
ferences in economic location, 17	as measure of the productivity of
objective conditions of, 60	a soil, 100
of farming as affected by changes	forms of, 22 f.
in technique of agricultural pro-	index of, 87-90, 103 f., 152, 155
duction, 36-47	index of, for animal products, 138
of farming as affected by increase	See also Rent
in per-capita consumption, 33-36	Land use
"relative," 57	as affected by utilization of the
tendency to level out differences	products, 75 f.
in, 49 f.	branches of, as related to convert-
types of, as observed by a farmer,	ing enterprises, 118
51	changing interrelationship in types
vertical differentiation of degrees	of, 108 f.
of, 36	diversity of, for best land utili-
Intensive farming, definition, 1	zation, 66
Interest, rate of, 42	
	types of, 5
Investment, risk of, 58	types of, as related to types of
Investments, long-term, 42	processing, 119 f.
Isolated state, 11, 43, 52—	types of, differentiation, 18, 19
as affected by increased demand,	types of, labor and capital re-
34	quirements of, 19

Land utilization, coöperation of crops in, 66 f.  See also Crops  Land value, an effect of the gradation of intensity, 15 f.  its source in economic location, 16  Large-scale production, 160-163  Law of diminishing— rate of increase in return, 7 f. return, 24, 43, 7 f., 63, 125 yield increase, 129, 145  Law of increasing costs, 63  Law of the minimum, 31, 38, 105 f.  Law of the soil, 62  Legumes, shifts in production of, 148  Liebig, Justus von, viewpoint in regard to intensity of fertilization, 24-26  Livestock— an indispensable enterprise, 73 f.  Livestock enterprises, a "necessary evil," 130 as influenced by cropping systems, 130 as influenced by need for fertilizer, 130 characteristics of, 121 f. general reasons for close connection of, with farm organizations, 124-127  limits of extent of, 127-142 location of, as influenced by concentrated feeds, 137-142 major problems of, 127 shifts in profitableness of, 129 f.  Location— changes in the effects of the forces of, 144	lationship of types of land use, 108 f.  Meat, market price of, in relation to bread grains, 146 f.  "Mining" in agriculture, 25 f.  Money— economy, conditions of, 15 wages, 41  National economy, nature and development of, 157  Natural— differences in agriculture, strengthening through technical im-
<b></b>	
	facilitation of, 151 f.
	Meadows, importance of, in interre-
	wages, 41
	National economy, nature and de-
changes in the effects of the forces	ening through technical im-
economic, as influencing individual	provements, 49
initiative in agriculture, 53	location as compared to economic location, 27 f.
explanation of shifts in, 148	location, definition of, 27
geographical and chronological	"Natural wage," of Von Thünen, 41
modifications of, 143 f.	Nature—
marketing and purchasing, 11 measure of favorableness of, 11	a direct factor in modification of
Locational factors—	production, 107-110
natural more important than eco-	affecting diversification, 110 f.
nomic, 32	an indirect factor of modification
origin of, 104	of production, 110 f.
•	as a factor of integration, 110 f. as influencing individual initia-
Manure production in relation to	tive, 53
animal products, 132	variations in reaction of, on forms
See also Fertilizer	of cultivation, 107 f.
Margin of profitableness, 8	Nitrogen problem on the farm, 71 f.

Objective influences pertaining to Production production, 112 expenses, market and farm share Organic-technical improvements, 49 of, 34 f. Orientationgoods, groups of, 12 forces of, 84 leveling out of differentiation in, of enterprises with regard to con-150 sumption or production of raw Productivitymaterials, 160-163 most decisive natural factors of. production, a competitive struggle, 101 of soil as determined by gross reof production, general rules of, turn, 100 Productsof production, similarity between animal, in relation to manure pronatural and economic factors duction, 132 affecting, 104 combination of, for technical reaof production, to market, 84-88 sons, 98 Orienting force, expression of, 112 from the farm, consumable or salable, 117 Perishability of farm products in marketable and unmarketable, relation to improvement in transconcepts of, 126 portation, 153 of the farm, a problem of farm Philippovich, status of technique, 36 organization, 117 f. of the farm, problem of produc-tion of, 119 f. Population, increase in, affecting intensity of farming, 33-36 Power, principle of conserving, 47 of the farm, utilization of, 119 quality, production without com-Pricelevel of production goods, relapetition of, 60 tive, 14 Profit economy, agriculture not a, market, as a means of determin-158 ing local price, 11 Profitablenessspread between product and cost conditions of, for fresh-milk profactors, 14 duction, 132 limits of, 9 Priceslocal and market, as affected by limits of, factors shifting the, 9 f. improvements in transportation, Profits, entrepreneurial, 52 Progresslocal, determining factors, 11 affecting the lines of production, of agricultural products in Prussia, 142-162 1821–1910, 147 economic, affecting agriculture, relative, importance of, in determining productivity of soil, 100 in agriculture, motive for, 52 Primary products of the soil, utiliof a national economy, character zation of, 116 f. periods of, in Germany, 157 f. Processingas affected by limitations in transportability, 160 f. Quality products, production with. branches of agricultural, 5 out competition of, 60 increase in, with distance from market, 98 location of, as determined by costs Rationalas related to technique, 54 of transportation, 160 f. location of, in regard to location of definition, 1 in comparison to average return, 52 production of raw products, 160 products of the land, definition, 117 rate of expenditure, difference in increase of, 17 See also Converting: Refining

Real-	in German agriculture, 151
cost, 100 f.	in production, 144
wages, market share and farm	Size of farm—
share of, 41	in relation to objective conditions,
Refined and unrefined products, land	114 in relation to personal factor 112 f
requirements of, 87-90 Refinement—	in relation to personal factor, 113 f. Soil—
definition, 117	conditions, physical, influencing
of agricultural products on the	land utilization, 28-30
farm, branches of, 5	crop requirements upon, 101, 103
two main branches of, 117	exhaustion, 25
See also Converting; Processing	productive capacity of, 99 f.
Rent-	productivity of, impossibility of measuring, 27
in general, 90-94	measuring, 27
as the goal of all farm operations, 9	Sombart, "principles of the business
causes of variations of, 52	office," 55
in relation to transportation costs, 86	Specialization, forces of, 61 Standard of living, farm as a means
variations due to price relation-	of maintaining, 55
ship, 15	Static—
See also Land rent	conditions, lines of production
Replacement theory of fertility as re-	under, 78–99
lated to profitableness, 24-26	national economy, 33
Ricardo, rent, reasons for increase, 15	Statics, theory of, in soil fertility,
Risk—	24 f.
of investment, 58	Straw, utilization of, 134–137
"risk fund," 58 to the entrepreneur, 115	Subjective influences pertaining to
Risks—	production, 112 Summer fallow—
for natural reasons and price move-	facilitating labor distribution, 65
ments, 115	types of, 22
to the farmer, 56	See also Fallow
Rotation-	Supplementation of crops—
outer and inner, 73	in general, 66 f.
selection of crops for, 68 f.	for feed production, 75 f.
three- and six-year crop, 67 f.	Supply of farm products for home
	use, enterprises, 158 f.
Seasonal changes of weather as influ-	Technical—
encing utilization of labor and	ability, average levels of, 51
capital, 21 f.	development, phases of, 38
Self-sufficiency—	improvements affecting competi-
condition of pure, 14 f.	tive position of areas, 45-47
customs influencing extent of, 159 f.	improvements, behavior of expen-
	ditures for, 39 f.
Settegast, H., costs of transporta- tion, 81-83	improvements, occurrence of
Sheep—	changes in the level of, 51
absolute and by-feeds for, 140-142	improvements under dynamic con-
enterprise, limits of, 141	ditions, 43 f.
Shifts—	side lines, 160–163 Technique—
changing demand as motive for,	as influencing butter production,
144	156
in agriculture caused by develop-	changes in, affecting agriculture,
ment of technique, 151-162	36–47

172 INDEX

changing, motive for shifts in production, 144 development of, as inner cause of shifts in agriculture, 151-162 of agricultural production, changes in, affecting intensity of farming, 36-47 of conversion, effects of development of, 154 rational, 54 real aim of improvements in, 50 types of improvements in, 37 types of improvements in agricultural, 155 f. Theer, entrepreneur determining factor in success, 54 Thünen, Vonbutter production, 132 differences in local prices, 11 distortion of zones through savings in transportation, 152 economic location of production, 94 f. in regard to agricultural entrepreneur, 55 isolated state, 11 location of production in regard to market, 85-87 "natural wage," 41 quality of soil, 107 rent, reasons for increase in, 15 resistance of isolated state to personal factors, 113 stages of economic development, 143 wages, 13 See also Isolated state; Zones Time element in changes, 59 Transportability of farm productsin general, 80 f. in relation to improvements in transportation, 153

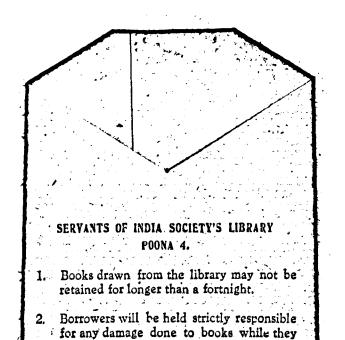
Transportation—
affecting production, 79-97
development of, as causing shifts
in agriculture, 151-154
effect of improvements in, 45 f.
index of savings in, 85-90
relative costs of, 81
unequal benefits of improvements
in, 153 f.

Utilization of farm products by-products, 99 clarification of concept of, 120 f. combined effect of, 123 extreme limits of profitableness in, 124 f. large-scale operation in, 122 f. margin of profitableness in, 125 principal differences in, 121

Wages—
farm share and market share of real, 41
limitation of, to the general rule, 96
money, 41
money, definition and tendencies, 13
real, definition and tendencies, 13
tendency to increase, 40 f.
Von Thünen's "natural wage," 41
Yield capacity, specific, of soil, 99
Yields per unit of land, improvements causing increasing, 155

Zones—
near the market, gradations in, 30 of intensity of farming, 20
See also Thünen, Von; Isolated state

CHECKED 2003-04



are in their possession.