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GEOGRAPHISCHES JAHRBUCH

VOLUME 61

PART II

Gustav Fochler-Hauke	--	MONGOLIA (1938-1954)
Gustav Fochler-Hauke	--	NORTH-EAST CHINA (MANCHURIA) (1926-1953)
Bogodar Winid	--	LOWER INDIA (SUPPLEMENT) (1926-1953)
Ernst Reiner	--	NEW ZEALAND (1938-1952)

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FOREWORD

The following "Part II" completes Volume 61, the last of the volumes of the Geographische Jahrbuch to be published under my signature as editor. In the pages of Part II G. Fochler-Hauke contributes two reports, particularly valuable at the present moment, on Mongolia (1938-54) and North-East China (Manchuria) (1937-1953). E. Reiner now adds a report on New-Zealand (1938-1952) to his earlier report on India, which was contained in Part I. For the valuable supplement added to

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E. Reiner's report on India those who are going to make use of the Jahrbuch have occasion to feel grateful to Mr. B. Winid, no less than I do as the editor. I am particularly glad to submit his suggestions concerning future adaptation of the Reports, since an entirely new working program is to be worked out in connection with the change of editors -- beginning with Volume 62, Prof. Dr. O. Berninger will sign as the editor. I wish to take advantage of this opportunity also to express my sincere thanks to all the collaborators who made it possible for me to keep the Jahrbuch alive through the difficult years of the post-war period.

GOTHA, February 1956

HERMANN HAACK.

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A B B R E V I A T I O N S

Alpine J., London = Alpine Journal, London

AmAssPetrGeolTulsa = Bulletin of the American Association of Petroleum Geologists, Tulsa (Oklahoma, USA)

AnnAssAmG., Lancaster = Annals of the Association of American Geographers, Lancaster (Pennsylvania, USA)

AnnG. = Annales de Géographie, Paris

Ann.Rep.SmithsonianInst. = Annual Report of the Smithsonian Institution, Washington

Austr.Geogr., Melbourne = Australian Geographer, Melbourne

Botan. Ztschr. = Botanische Zeitschrift

BSGItal., Roma = Bolletino della Società Geografica Italiana, Roma

B.Soc. des Océanistes = Bulletin de la Société des Océanistes, Paris

Bull. Geogr. Inst. of the Tokyo Univ. = Bulletin of the Geographical Institute of the Tokyo University

Bull.Geol.Inst.Dairen = Bulletin of the Geological Institute of Dairen

Dt.Kolonialztg. = Deutsche Kolonialzeitung, Berlin

Econ.G. = Economic Geography, Worcester (Mass., USA)

Econ. Record = Economic Record

Forsch. u. Fortschr., Berlin = Forschungen und Fortschritte, Berlin

GAnz. = Geographischer Anzeiger, Gotha

Geogr. Helvetica = Geographica Helvetica, Bern

GJ. = The Geographical Journal, London

GMag., London = Geographical Magazine, London

GRev. = Geographical Review, New York

GZ. = Geographische Zeitschrift, Leipzig

Hdb.d.Geogr.Wiss. = Handbuch der geographischen Wissenschaft

Int.Sociol.Sc.Bull. = International Sociological Science Bulletin

J.ofEcon.Hist., New York = Journal of Economic History, New York

J. of the Fac. of Sc., Imperial Univ. = Journal of the Faculty of Science, Imperial University, Tokyo

JGeol. New York = Journal of Geology, New York

J.ofGeomorph., New York = Journal of Geomorphology, New York

J. of Glaciology, London = Journal of Glaciology, London

J.Polyn.S.Hawaii = Journal of the Polynesian Society, Hawaii

Met.Mag., London = Meteorological Magazine, London

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MGGes.Wien = Mitteilungen der Geographischen Gesellschaft Wien

Nat. = Nature, London

NZCentennial Surveys = New Zealand Centennial Surveys

NZDept.Sc.and Industr.Res. = New Zealand Department of Scientific and Industrial Research, Wellington

NZG. Christchurch = New Zealand Geographer, Christchurch

NZGeol.Mem. = New Zealand Geological Memoir

NZGS. Reprint Ser. = New Zealand Geographical Society Reprint Series, Dunedin

NZHolyday Guide = New Zealand Holyday Guide

NZJ. of Agricult. = New Zealand Journal of Agriculture, Wellington

NZJScTechn. = The New Zealand Journal of Science and Technology, Wellington

Ostas. Rdsch. = Ostasiatische Rundschau, Hamburg

PM. = Petermanns Mitteilungen, Gotha

Proc.Am.Phil.S. = Proceedings of the American Philosophical Society, Philadelphia

Rec.NZG.Soc. = New Zealand Geographical Society, Record of Proceedings of the Society and its Branches, Christchurch

Rep. of the Inst. of Sc. Research of Manchoukuo = Reports of the Institute of Scientific Research of Manchoukuo, Hsingking

RevGAm., Buenos Aires = Revista Geografica Americana, Buenos Aires

Royal Central Asian J. = Royal Central Asian Journal, London

R.S.Empire Sc. Conference Papers = Royal Society Empire Scientific Conference Papers, London

RSNZDunedin, Rep. = Royal Society of New Zealand Dunedin, Reports

RSNZTrProc. = Royal Society of New Zealand, Transactions and Proceedings, Dunedin

ScottGMag. = The Scottish Geographical Magazine, Edinburgh

ZGeomorphol. = Zeitschrift für Geomorphologie, Berlin

ZGeopol. = Zeitschrift für Geopolitik, Heidelberg

Ztschr.f.Erdk. = Zeitschrift für Erdkunde, Frankfurt a. M.

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G E O G R A P H Y

M O N G O L I A

(1 9 3 8 - 1 9 5 4)

By Prof. Dr. GUSTAV FOCHLEY-HAUKE, Munich

In the pages of the "Geographische Jahrbuch" Mongolia has been given attention only in certain reports on Upper Asia. To a large extent the literature dealing with this region of Inner-Asia is accessible, in the Western countries, only with difficulty, if at all. As a result of conditions in general, the so-called Outer-Mongolian region has during the last few decades remained closed to scientific investigators not only from the Western countries, but also those of China and Japan. Russian scholars no doubt have traveled extensively through the areas in question, but their findings mostly have failed to become known outside the Soviet Union; and even the publications based on those findings have in most instances failed to find their way into the Western libraries. Quite a number of the studies published in the languages of Western Europe are based on field investigations made prior to, or shortly after, the First World War; and many of them are devoted to problems of a political nature. Of particular importance in this connection is the "Physical Geography of the Mongolian People's Republic" by E. M. Murzaev, the first, German, edition of which appeared in 1948, and was followed in 1951 by the Russian edition, which appeared in Moscow. This treatise reports the results of a large number of investigations made by Soviet-Russian scientists who worked in Mongolia during the last dew decades. Its Annex contains an extensive bibliography of writings by the before-mentioned scientists. The most important of these publications will be mentioned in the following, and will be evaluated on the basis of Murzaev's in many instances textually reproduced material derived from them.

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The region known as Inner Mongolia was far more readily accessible prior to the last war, since as a rule the Chinese did not prevent travelers from entering these areas. When the Japanese, during the thirties, kept penetrating further and further into the territory of Inner Mongolia, they also

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sent out representatives of the various fields of scientific research, notably geologists and biologists; but their studies -- to the extent that they were made public at all -- have remained almost entirely unnoticed in the Western countries.

Despite the above-mentioned circumstances a report on the Mongolian territories is at this time not wholly lacking in interest, since a comprehensive review of the scattered individual studies reveals the landscape and its inhabitants to some extent from a new point of view; and this holds true especially for the most recent developments in the field of economy and political geography, since the events in question have failed almost entirely to become known to the general public, although they are of such nature as to have considerable importance also from the point of view of geography. The territory inhabited by the Buryat Mongols will receive little attention in the following, since that part of the subject is treated in the literature on Northern Asia and the Soviet Union, respectively.

Most of the titles of publications in the Chinese, Japanese, and Russian languages will be cited here in the German language, unless the original publication includes a title spelled out in the Latin alphabet. So far as possible, the titles cited will be given in faithful reproduction of the original. Lacunae in some parts of the bibliographies are due to the difficult conditions prevailing at this time.

1. MAPS AND ATLASES, STUDIES ON TERRAIN AND OTHER GEOGRAPHIC NAMES

1. Chin-Ching-Yu, Ling Ta-Hsia, and Chin-Chi-An: Chung Hua Jen-Min Kung-Ho-Kuo Fen-Sheng Ti T'u. (Atlas showing the Provinces of the Chinese People's Republic, Shanghai 1950, 52 K. (Chin.)).

2. Ting Wen-chang, Ong Wen-hao, and Ts'eng Shih-ying: New Atlas of China. 5th Edition. Post-war edition revised by Ts'eng Shih-ying and Fang-Chün. Shanghai 1948, 94 texts, 58 K.-S. (Chin.).

3. Fuchs, W. (Editor): The "Mongol Atlas" of China by Chu-Ssu-Pen and the Kuang-Yü-Tu. 32 pp., 48 facsimile maps of ab. 1555. Monumenta Serica: Journal of Oriental Studies of the Catholic University of Peking, Mong. VIII. Fu Jen Univ., Peiping 1946.

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4. Kazakyevich, V.A.: Modern Mongolian Toponomy (Original published by the Akademiya Nauk, Research Committee for the Mongolian People's Republic: Works of the Mongolian Commission No. 13, Leningrad 1934); translated by F.D. Lessing, Berkeley, California, 1942. Detailed review by D. Troxel (Engl.), (in GRev. XXXVII, New York 1947).

5. Plaetschke, B.: Ein landschaftskundliches Kartenwerk über die Nordmongolei. (GAnz. XLI, 1942). Detailed discussion of landscape-study maps produced by J. Granö on the basis of his travels prior to the First World War.

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6. Murzaev, E.M.: Karte der Mongolischen Volksrepublik, 1:5000000, in colors; Supplement to No. 25. This is at present the best general physical map available for Outer Mongolia. Distinguishing 8 different levels of altitude it furnishes a clear picture of the relief. It distinguishes between the occasionally dry and the permanently flowing rivers, and between lakes of sweet water and salt water. Sandy areas and dune regions are indicated, as well as the swamps and lakes. The more recent settlements and routes of communication are shown, though the very recently completed railroad line from Tsining, Inner Mongolia, to Ulan-Bator is, of course, not shown. Of real importance is the fact that the various mountain ranges and rivers are accurately designated in accordance with the present state of knowledge and official orthography.

7. Bespalov, N. D.: Bodenkarte (ground formation map) der Mongolischen Volksrepublik. Supplement to No. 25. This appr. 1:85000000 map edited by B.B. Polynov marks considerable progress as compared with our present state of knowledge. It distinguishes as many as 15 types of ground formation. In the mountainous marginal areas and in the Changai the predominant types include the following soils: mountain-meadow, gray forest, mountain black soil, and chestnut-colored mountain soil. The central parts have predominantly the chestnut-colored steppe soil, as well as solonets and solonchak type combinations. The Gobi Desert has to some extent brown soils of the dry-steppe type.

8. Junatov, A.A. (Yunatov?): Vegetation Map of the Mongolian People's Republic. Scale the same as No. 7; Supplement to No. 25. Yunatov, one of the best

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experts on Mongolian flora, distinguishes 16 different formations, apart from terrain without vegetation. He is the first to distinguish between different types of Mongolian mountain forests, and the High-Mountain Taiga is considered apart. Particularly interesting is the author's differentiation of steppe vegetation (among others, mountain steppe, feather-grass steppe, and wormwood steppe).

Most of the more recent special maps of Mongolian territory, notably those brought out in the Soviet Union and Japan, cannot be included here for evaluation, since they are not accessible. The Provincial Atlas of China (no. 1) is printed in five colors and gives surface formation, boundaries, settlements and routes of communication. A separate map is provided for Outer Mongolia. The regions of Inner Mongolia are shown on a scale of 1:4 million, except that the former Province of Tschahar is presented on a scale of 1:3 million. The "New Atlas" includes 1:3 million maps of the provinces of Inner Mongolia; and the map of Outer Mongolia is drawn on a scale of only 1:7.5 million. The soil maps show, among other things, that the distinctly desert-type soils of the former Province of Ninghsia are less wide-spread than has been assumed heretofore. The "Mongol-Atlas" (No.3) brought out by the well-known German sinologist W. Fuchs is, above all, of great historical value and is indispensable for inquiries of that kind.

The treatise by Kazakyevich (No.4) furnishes proof of the very close

Page 190: relations between the Mongolian nomad population and the areas through which it moves; for a highly varied and accurate body of designations is available referring to every kind of topographic details. Many of the designations used also reflect impressively the social structure and the religious ideology of the Mongolians. Under the influence of numerous extant Mongolian travel accounts of the unprofessional and phantastic sort, there is a wide-spread tendency to associate with the word gobi the idea of a waterless sandy wasteland; but the Mongolian uses this term to refer to a more or less level sandy or gravel-covered surface which, though at long intervals, possesses a few water holes and, in some instances, even water

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in the form of a spring, and a sparse growth of hard grasses, and at a few rare spots a grove of trees. perhaps even [redacted] Dunes formed by wind-blown sand are known as mangkhan and bare, dark surfaces as khara gobi, while dried-out salt pits are called dabasa. Sources and fountains often are named according to the vegetation growing in their vicinity. Thus one frequently encounters the terms jagh (saxaul), deresen (feather-grass), khulusun (reed grass), burgasun (willow thicket), and sukhai (tamarisk). On the "Khara Gobi" between Edsin-gol and the frontier of Sinkiang the designation jagh is very frequently found, often in the combination shara jagh (yellow saxaul) or khara jagh (black or dead saxaul). The names of settlements, likewise, frequently are derived from the vegetation. Thus the name Uljasutai conveys, approximately, the meaning of "place where there are aspen trees." The suffix tai or tu (to, ta) is attached to a noun to indicate the presence of something or other. Consequently one often meets with names of localities such as khujirtu ("place where there is salt"), shubartai ("place where there is clay"), and the like. Hot wells are known as arshan. Many of the names include the designation of a color, due to the fact that in a bare landscape the coloring usually is very noticeable: tologoi = White Summit, boro obo Gray Obo, ulan nur = Red Lake, koko ula = Blue Mountain. Topographical designations such as khoni (sheep (plural)), mori (horses), ukher (cattle) occur very frequently and call attention to the important part played by cattle in the life of the nomad. Numerous are also the temple names to be found on the maps, usually with the genitive ending i or in (e.g. Lamain sume = temple of the Lamas; Khadain sume = temple of the steep cliff). The highest title of honor, Bogdo ("Lord"), which is reserved for the living Buddhas, has in a good many instances been applied also to important mountain summits that are regarded as holy. Of extraordinarily frequent occurrence in the Mongolian landscapes are the obos, a term used in combination with a variety of adjectival expressions as a geographic designation. These tokens of Shamanist ideology--consisting of branches, rags, and sheep's feet -- rise above a cairn of loose stones to serve as important landmarks and serve to guide the traveler. Through the obo the Mongol gets in touch with the local spirits, the gajarin ejen, whom he

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regards as the real masters of the earth, whereas man is regarded merely as an interloper. In many instances the names of the mountains bear evidence to the magic character of the world as reflected in the imagination of the simple herdsmen, fre-

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quently indicating fear of certain mountain summits, sometimes even of their very names, names that some natives would not dare to speak. Few treatises are so well suited as that published by Kazakyevich (N.4) to bring home to the reader in a concrete manner the distinctive character of the relations between man and nature as reflected in the Mongolian geographic names.

Murzaev (No. 25, p. 19 ff.) likewise deals with the geographic names of Mongolia, presenting a large number of orographic, hydrographic, and regional terms. He also contrasts the Russian orthography, as used by us, with the genuine Mongolian names (Gobi = Gov, Ubsa = Ovs, etc.), and calls attention to designations derived from the Chinese, Thibetan (connected with Lamaism), Russian, and the Turkmenian languages. Some of the Turkmenian elements go back very far in history, but the influence of modern Turkmenian peoples is likewise reflected in the toponymy of Mongolia.

2. GENERAL ACCOUNTS, RESEARCH REPORTS, DESCRIPTIONS OF PARTS OF THE REGION

9. Bespalov, N.D.: Die Böden (soils) der Mongolischen Volksrepublik (In: Studies of the Mongolian Commission of the Academy of Science of the USSR, No. 51, Moscow 1951 (Russian)).

10. Cressey, G.B.: Asia's Lands and Peoples, 1st Ed., New York 1944; 2 Ed. 1952 (English). Contains among other things a brief geographic account of Mongolia.

11. Dann, I.: Die Innere Mongolei. (GZ XLVIII, 1942.)

12. Demidov, S.S.: Die Mongolische Volksrepublik. Geographic Publications, Moscow, 1952 (Russian).

13. Fochler-Hauke, G.: Asia, Manual Geográfico, I, p.90 ff.(Buriatia); II, p.326 ff. (Mongolia, Mongolia Exterior, M. Interior, Mongol Olos). Tucumán 1953 (Spanish).

14. --: Mongolei, Mandschurei, Korea: Länderkundliche Grundzüge (geographic fundamentals); unpublished manuscript with the Siebenberg-Verlag.

15. --: Das Steppenhochland der Barga (plateau steppe of the Barga). (In: Die Mandschurei, Heidelberg 1941, 113-36, Illustrated; Maps).

15a. --: Die Mandschurei (Manchuria). Heidelberg 1941, 448 pp., Illustrated; Maps.

16. Granö, J.G.: Mongolische Landschaften und Örtlichkeiten (Mongolian landscapes and localities). A Geography of Physiognomic Types and Uniform Areas, I. (Publ.

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by Inst. Geogr. Univ. Turkuensis, No. 19, Helsinki 1941, 291 pp., 2 Maps, 3 Fig., 27 Pictures).

17. Gerasimov, I.P. and E.M. Lavrenko: Principal Natural Traits of the Mongolian Peo le's Republic. (IN: Reports of the Academy of Science of the Soviet Union, Geographical Series, No. 1, Moscow 1952 (Russian)).

18. Grenard, F.: La Haute Asie (Inner Asia). (Chapter: La Mongolie; in: Géographie Universelle, Vol.VIII, Paris 1929, pp. 248-86, Pictures, Maps (French)).

19. Hedin, S.: Die Auswertung der Ergebnisse meiner Zentral-Asien-Expedition 1927-35 (evaluation of results of expedition into Central Asia). (PM 1942, 305-19).

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20. Kolarz, W.: The People of the Soviet Far East. London 1954 (English). In this volume Outer Mongolia is mistakenly represented as an exact copy of the Soviet Union as regards political, social, and economic organization; cf. also Review in GJ, London 1951, 508.

21. Kozlov, P.K.: Mongolia, Amdo, and the Dead City of Chara-Choto. Moscow 1947 (Russian). A new edition of the famous research report first published in 1923.

22. --: Trip into Mongolia 1923-26; edited by E.M. Murzaev. (IN: Notes of the Geographic Society of the Soviet Union, New Series, Vol. 7, Moscow 1949 (Russian).

23. Kupletski, N.: Eastern Mongolia. Leningrad 1938 (Russian).

24. Lautensach, H.: Der Geographische Formenwandel. Bonn 1952, 143 ff.

25. Murzaev, E.M.: Die Mongolische Volksrepublik. Physical Geography Account. Gotha 1954, Pictures, Maps. German translation of the Russian original work (1st ed. 1948, 2nd ed. 1951).

26. --: The Mongolian People's Republic. Land, population, economy. Leningrad 1947 (Russian). This geography of the Mongolian People's Republic was also published in 1943, in the Mongolian language, at Ulan-Bator. In No. 25 of this Bibliography the author furnishes, on p. 32 ff., a brief account of the governmental structure, the population, and the country's economy.

27. --: Geographical Exploration of the Mongolian People's Republic, published by the Academy of Science, Moscow-Leningrad 1948 (Russian). This is the best account so far available of investigations of this part of Central Asia. No. 25 gives a brief excerpt from the text. The more modern type of systematic in-

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vestigation was first started in 1921 as result of formation of the Scientific Committee of the Mongolian People's Republic, and has been intensified since 1942 as result of the opening of the Mongolian State University at Ulan-Bator and the creation of its library, which at present is in possession of more than 200000 books and manuscripts. Even more important for modern scientific research was the establishment, in 1925, of the Mongolian Commission in the Soviet Union, whose contributions are published in the "Trudi Mongolskoy Komissii." Since then a number of Soviet and Mongolian expeditions have been continuing the praiseworthy tradition of earlier decades in Russian studies of Mongolia. The work of the following authors, above all, must be mentioned here in that connection: A.G. Bannikov, A.N. Formozov, N.N. Lebedov, Z.A. Lebedova, A.A. Yunatov, I.M. Krashinnikov, N.V. Pavlov, B.B. Polynov, and A. Ya. Tugarinov.

28. Olschki, L.: Marco Polo's Precursors. Baltimore 1943. IX and 100 pp. Maps. (English).

29. Perlin, B.: The Mongolian People's Republic. Moscow 1941 (Russian).

30. Plaetschke, B.: Landschaftskundliche Wesenszüge der östlichen Gobi. (In: Wiss. Veröff. d. Dt. Mus. f. LÄnderk. Leipzig, N.F., No. 7, Leipzig 1939, 105-45, Pictures.)

31. Pomus, V.J.: Buriat-Mongolia. (Publ. of the Inst. Pacific Relations, New York 1943 (English)).

31a. Pomus, V.J.: The Buryat Mongolian Republic. Moscow 1937 (Russian).

32. Potanin, G.N.: A Trip through Mongolia. Moscow 1948 (Russian). 2nd Edition of the well-known volume "Sketches of Northwestern Mongolia," which appeared in several volumes in St. Petersburg 1881 and 1883.

33. --: The Chinghai-Tibetan Marginal Area of China and the Central Gobi. Moscow 1948 (Russian). New edition of the work formerly published 1883-86. Like No. 32, it was edited by V.V. Obruchev.

34. Prschevalskiy (Pshevalskiy), N.M.: Mongolia and the Tangut Country, I-II. Moscow 1946 (Russian). 2nd Edition, edited by L.M. Murzaev, of the well-known travel and scientific reports formerly published in St. Petersburg 1875/76.

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35. Saposchnikow (Zapozhnikov?), V.V.: The Mongolian Altai at the sources of the Irtysh and Kobdo, published under the title "Through the Altai," as a new edition

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-- edited by Obruchev -- of a travel report published at Tomsk prior to the First World War. Moscow 1949 (Russian).

36. Steiger, A.J. and R.A. Davies: Soviet Asia. London 1943 (English).

37. Thiel, E.: Sowjet-Fernost (Soviet Far-East). Munich 1953. 329 pp. Maps.

38. Vargin, N.: The Mongolian People's Republic. Moscow 1949 (Russian).

39. Wegener, G.: Die Mongolei (Mongolia). (IN: Hdb. d. Geogr. Wiss., Vol.: Northern Asia, Central and Eastern Asia, Potsdam 1937, 411 ff.).

40. Zapkin, N.V.: The Mongolian People's Republic. Moscow 1948 (Russian).

Most of the above-cited studies furnish a brief geographic survey of Mongolia as part of a treatise on larger areas. Thiel (cf. No.37), in dealing with the far-eastern territories of the Soviet Union, also indicates briefly at various points the geographic fundamentals, the economic conditions, and population policies in the Autonomous Buryat-Mongolian Republic. Most of the general accounts of the Mongolian People's Republic published in the Russian language were not available to the author of this article. Among the best geographic sketches of Mongolia published in one of the Western languages must be cited, as heretofore, the treatise by Grenard (No. 13). Consequently this work was listed here once more, although it was published as long ago as 1929. The appr. 100-page geographic survey by Fochler-Hauke (No. 14) deals in detail also with the more recent economico-geographic facts, but is still awaiting publication. Olschki (No. 28) gives, to some extent from novel points of view, an objective account of travels undertaken in Central-Asia prior to Marco Polo. Although the detailed study by Garnö (No. 16) is based upon investigations that are no longer quite up-to-date, it can still be regarded as one of the most important contributions, so far, to the geography of Mongolia. The volume gives careful accounts of individual portions of Mongolia, with emphasis upon the methods of geographic investigation. The observations made during the author's own travels (1906, 1907, 1909) in the Tuba Country and Northern Mongolia were integrated there in the most conscientious manner with the most important of the literature extant on the subject. One of the most characteristic types of Mongolian landscape is the so-called Lake Region, which forms an in part very narrow zone between the Altai and the Changai country. It extends for a distance of 1300 km. from Tuba in the north to points east of the Ongin River; and in this region the Ubsa-Basin

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(830 m. above sea level) is the lowest depression of the ground in Outer Mongolia. Flat contours, steep cliffs and monadnocks, sandy or stony desert-steppe, salty lakes and periodic water courses are the dominant features of the landscape. The Kobdo-Altai southeastward high-mountain chains with intervening plateaus and stretches of hilly land. The highest elevation, located in the northwestern part, is the glacier-covered Tabun-bogdo, 4653 m. in height. A number of fairly large lakes are located within the drainage area of the Kobdo, in basins at the foot of glaciers that date back to the ice period. At elevations between 1500 and 2000 m. on the relatively moist outer slopes of the Altain-muruulie areas of coniferous growth, which separate the Dsungarei desert-steppes from the Alpine meadow-lands of the high mountain range. The largest compact landscape is that of the Chanai (Khangai), which reaches elevations up to 4031 m. on the Otchon-tengri and which, together with the surrounding areas, is taken to have been the ancient homeland of the Mongols. Archaic and proterozoic schists predominate there, and granites are extensively represented. In the northern part one finds forests of larch, intermingled with pine and birch; and there are intervening large mountain-meadows; farther south the steppe-land begins to predominate. In the same treatise Garmá also enters into a number of special problems, e.g. the problem of glacial invasion. The highest chains were to a considerable extent transformed by glacial invasion. The conglomerates, marls, sands, and clays deposited in the Jurassic and Tertiary systems are recognized by the author as having furnished the starting material for the widespread areas of drifting sand and for the fields of gravel and rubble. Taken as a whole the landscapes investigated by the author form transitional areas between the forested mountain lands of Sibiria and the Gobi Desert.

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Lautensach (No. 24) also briefly examines geographic morphological changes in Mongolia, applying his own specially developed methods to concrete instances presented by his topic. He reaches the conclusion that planetarian morphological changes are of such slight importance in the areas under consideration that there is no need to discuss them. Similarly the hypsometric conditions (broadly considered, a flat basin 600-1100 m. above sea level subdivided, but not at all prominently, by minor basins, residual knob chains, and sheets of basalt) are not suited

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to serve as basis for delimiting geographic subdivisions. The most distinguishing characteristic is that of dryness, especially in the interior of Eastern Mongolia, where the climate permits the development only of a desert-steppe with species of Artemisia. This core is surrounded by a belt where the aridity is less. On his Map No. 6 Lautensach finally breaks down the East-Mongolian territory, in keeping with the small amount of peripheral-central change, into a number of ring-shaped zones. Thus the central core region is assigned by him the geographic formula Wk_{4-6} (cold-winter zone, degree 4-6); Mo_2 (2nd Mongolian echelon, as viewed from the frony) Z_2/z_2 (a formula de indicate position of the area with respect to the central region, as indicated by the number of traits characteristic of the central region); H_2 (2nd degree of range of altitude, i.e. 500-1500 m. above sea level).

Plaetschke (No. 30) has made a study especially of the eastern part of the Gobi desert and of ecological conditions in the forest-steppe areas. Apart from the usually predominant solid sand cover there are also extensive stretches of dunes, especially along present and former river courses. The prevalence of northeasterly winds, with occasional western or southwestern winds is indicated by ground surfaces and cavities ground by sandy winds. The dunes of recent origin consist mainly of quantities of old sand that have been shifted. At sand of the points where old sands have been shifted fossil horizons of the ground have been laid bare, exhibiting a thickness of several decimeters. The finds consisted mainly of local stone-age tools. Fochler-Hauke (No. 15) furnishes, on the basis of his own travels as well as the extant literature on the subject, a geographic account of the Barge, i.e. the farthest northeastern tip of the Mongolian Plateau, a region which at present belongs politically to the Autonomous Inner Mongolia of the Chinese People's Republic. The subsurface layers become visible only in certain localities, in the form of isolated granite hills and in the ancient schist formations of gentle swellings of the ground. There is a depression extending from the southwest toward the north or northeast, and this depression contains the large steppe lakes of the Dalai-nur and the Buir-nur. In some localities there are vulcanian series laid open, which in some instances have coal-bearing sandstone and and schist clays cropping out above them. In the east this depression has sloping down into it a flat steppe area with an erosively broken up steep edge

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of moderate height and gradient, this area being posed at the western foot levels of the Great Chingan. West of the depression spreads out a treeless flat area with scanty dune formation, where one encounters more or less frequently hill ranges consisting of the rocks of the ancient sub-surface and of more recent vulcanian formations. The climate is to a high degree continental. The western part of the Barga is practically without drainage, since at the present time the Dalai-nur (Kulun-nor), which receives among other waters those of the Kerulen, must be regarded as a terminal lake. The former outlet to the Argun now carries water at best sporadically; and during the high water season the Argun, in turn, is sometimes forced back into the lake, through the Mutny Protok. Predominance goes to chestnut-colored soils of slight thickness of layer with only a small content of humus. The vegetation includes intermingled representatives of neighboring vegetational regions. The eastern steppe has mostly the matgrass, and the western steppe has predominantly a wor wood vegetation. Gallery forests have developed along narrow strips of land. The fauna is generally speaking poor both as regards number of species and number of individuals. Stppe fauna and water birds are in the majority. Woodchucks, or ground-hogs, are very numerous and are of importance for hunting. Historically and ethnically the Barga has been a quiet corner, and was not diredtly touched by the great Mongolian movements of the 12th and 13th centuries. The Barga Mongols, who are the dominating element of the population, are not of the same descent as the Mongolians now present east of the Chingan or those of Outer Mongolia; and in part they differ also as to their political history. Resettlements under the Manchu Dynasty, as well as various recent movements, have brought Sultu, Dauri, and Buryat-Mongolian elements into the Barga. Probably there are not more than about 30,000 Mongolians living as nomad herdsmen in this territory. During recent decades, in connection with the construction of railroas, they have been crowded back a great deal by Chinese elements. In the north small Russian pioneer settlements have been formed since the First World War in the forest-steppe areas and their vicinity.

The findings of the Hedin expedition into Central Asia (No.19) are some of the highly significant also for the marginal areas of Mongolia. Hedin himself collected a large number of geographic observations and has published them in various contexts,

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especially in connection with his trip from Peilingmiao through large areas of Inner Mongolia as far as Kalgan. Essential, above all, are meteorological and climatological observations made by Haude, especially on the Bogdo-ola. Hummel, although of the medical profession, made valuable collections in his quality as botanist and zoologist; and among other things he investigated the vegetation of the Edsin-gol and of a large number of salt depressions on the Bogdo-ola. Bergmann's investigation of the traces of stone-age settlements between the Edsin-gol and the Sinkiang border have yielded important new information concerning the mode of life of palaeolithinc inhabitants of these territories. Mongolia, therefore, belongs -- as earlier investigations, likewise, have informed us, must be counted among the anciently settled areas. As I have mentioned, early stone-age settlements have been discovered also in the Barga (No.15, p. 111 ff.), between Chalainoerh and Hailar; settlements belonging to the more recent periods of the stone-age were of relatively common occurrence.

Unquestionably the most important more or less recent geographic treatise on Mongolia is the book by Murzaev (No. 25), which, fortunately for us, was translated by F. Tutenberg and edited by H. Täubert, and was published in this form as part of a series of important scientific treatises originally written in a foreign, especially the Russian, language. The principal sections of Part I deal with various individual geographic factors on the basis of the author's own investigations as well as the most recent, especially Soviet-Russian, literature on the subject. Part II, the synthetic part of the book, defines the four great physico-geographic zones, as follows: the mountain-forest steppe, the high-altitude steppe, the desert steppe, and the total desert. The first of these zones is divided into a mountain-meadow region, a mountain-taiga region, and a region of mountain steppe and forest steppe. According to Murzaev this region takes up about one-third of the area of Outer Mongolia. The steppe-zone and the desert-steppe zone occupy each about one-forth, and the desert zone appr. one-sixth of the total area. (Murtsaev) Murzaev

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points out that the Mongolian population has long since been familiar with a nomenclature of these regions that is concretely based on experience and observation, and distinguishes as principal zones the "Changai" and the "Gobi." By "Changai," however,

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the Mongolian means not only the moutain range that bears this name, but an entire mountainous landscape of medium elevation where a good grazing foundation for the cattle is to be found; but beyond that, even, the word "Changai" means to him the fulfillment of a wish and a foundation for living. The "Gobi" is quite the opposite: a landscape of deserts and semi-deserts with little water and characterized, as previously mentioned (No.4), by stony, sandy, or salt-containing soils. "Gobi," then, is for the Mongolian not only the desert-steppe and desert land circumscribed by the limits of Outer Mongolia and contiguous areas, but rather a frequently encountered type of landscape. According to Murtsaev the northern limit of the Gobi coincides, in the purely geographical sense, with the southern limit of distribution of the Tarbagan-Groundhog, since the latter, being a typical representative of the mountain-steppe fauna, is not domiciled in the Gobi.

In that part of his book which deals with the individual regions, Murtsaev provides a well-founded systematical division of the Mongolian People's Republic, according to the natural diversification of areas; for his own purposes he applies to the nature-defined areas the term "physico-geographic districts." In doing so he arrives, on the basis of his own personal knowledge of Mongolia and of the abundant literature integrated by him, in some respects to conclusions that differ widely from those reached by Lautensach (No.24); and he distinguishes between five areas as defined by their natural landscape, areas which he then proceeds to subdivide further. These are as follows: the Altai mountain District with four, the Great Lakes Depression with three, the Changai and Kentai (Chéntéj9 with eight, the High Plateaus of Eastern Mongolia with six, and the Gobi District with seven subdividions. In arriving at this systematization the relief of the terrain and the zonal-latitudinal characteristics are his principal criteria.

3. GEOLOGY AND GEOMORPHOLOGY; SOILS, CLIMATE, FLORA AND FAUNA

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Irmgard Dann (No.45-47) traveled through southern Mongolia as early as 1933/34 and in her studies devoted herself chiefly to the problems of dune formation and the distribution of dunes. Machatschek (No. 56), although he had not yet had the benefit of the most recent Soviet literature on the subject, gives in his treatise a succinct, clearly formulated and critical summary of geological and geomorphological field investigations in Mongolia. Mongolia belongs to the northern part of Central Asia and thus with the type of extended and fairly elevated trunk landscapes of relatively slight energy of relief, a type that are the result of ancient erosion and are, due to the dryness of the climate, in most instances only to a small extent intersected by erosive cuts. The horst type of mountain and residual mountains belong to a number of different systems of mountain frame which, apparently, converge in the inner part of the area into flat curves open toward the north. Northwestern Mongolia lies within the range of the old-palaeozoic foldings and takes at present the form of a plateau-formation type of country, with ridges of horsts extending west-north-west, which must be regarded as relatively recent dislocations of a flat relief that may date back to the middle-tertiary. Plateau formation stands out clearly also in the undrained-lake region (Ubsa, Kirgiz, and Durga-nur, etc.). The step-fault depressions still retain miopliocene Hanhai layers and diluvial river deposits from periods of more abundant precipitation and less evaporation. The Altai Mountains, which have their orographic origin in the Changai, extend as far as the "Orchon" (Orkhon?), forming a flat curve in east-southeast-east-northeastern direction, and exhibiting a uniform relief which, however, at some points more prominently glacial contours. The ancient flat central body surface is at many points still well preserved at 2,500-3,000 m. elevation. The Gobi-Altai, rising up to 4,500 m. and glaciated at individual points, is based in the southwestern part of the Kobdo depression and breaks off in step-formation, descending to Dzungaria

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depression level, whose undrained tub-shaped depressions are in some instances filled with lake waters. Between the former and the Changai lies the Dsapchin Step Fault, extending into the Gobi. East-Mongolia presents the form of a large flat bowl, the surface of which is broken up by gentle elevations of the ground into subordinate basins (Talas, Gobis). The subsurface, last folded in the upper palaeozoic, is covered over large areas by Angara layers that exhibit a varied intensity of folding activities, and have resting above them remnants of cretacean-tertiary Gobi sediments in the form of edge formations and basins. The question is still open whether the three extant systems of surfaces must in every instance be regarded as formations of different age. Very recent crust movements are suggested by intercalated talus compartments gradually replaced by rock terraces as one proceeds farther into the mountain ranges; but it seems possible also that their formation was in part determined by diluvial variations of climate. The eastern and southern edges of East-Mongolia form part of the Richthofen "Landstaffeln" (land echelons) where the peripheral parts of East-Asia have dropped to a relatively lower level as compared with the more elevated central-body surfaces of the interior. In the vicinity of Kalgan several

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plateaus formed of faulted blocks, mostly of one-sided structure, extend toward the southwest and represent the break between the southeastern Gobi and the rigid, relatively lowered, Ordos Plateau (Hotau), where, following a period of levelling, the relief was formed by fractural movements, persumably during the early tertiary period. The Alashan (Holanshan), up to 3,500 m. in height, has its steep slope directed toward the Hoangho, the large bend of which partly follows the fracture edges of the Ordos Table Land. The desert mountains of the Peshan, 2000 - 3000 m. in height, separate the central plateau body of the Gobi from the Tarim Basin; and its individual chains rise above talus-filled tectonic depressions. Due to the prevailing dryness of the air Mongolian landscapes are affected chiefly by the mechanical weathering of dry areas with intensive alternations of temperature.

According to fairly recent Soviet investigations (No.41) carried on in southeastern Mongolia the depressions between the horst-type ranges originated as early as the cretaceous period, but were to a large extent not formed until the times of the passage from the mesozoic to the cenozoic; and these investigators

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expressed the opinion that this type of structure, though it has a certain kinship with that of the Trans-Baikalian mountain ranges, is considerably less complicated. Gerasimov and Lavrenko (No.17) distinguish five geomorphological districts in Outer Mongolia: 1. The mountain lands of the Changai and Kentai; 2. the Mongolian Altai; 3. the "Great Lakes" depression; 4. the East-Mongolian Highlands; and 5. East-Mongolia's hilly lands of the "Gobi Type." According to these investigators a special position must be allowed for marginal areas such as the Great Chingan, the eastern marginal chains of the Tienshan, and the eastern mountain land of Dzungaria. Between 100 and 102° latitude two different types of structure meet one another in Mongolia: with northeastern orientation the structural lines of the mesozoic movements, and the Hercynian orientation of the Central-Asiatic (Tienshan) orogenesis, i.e. the northwestern direction in this instance. According to Kalenko (No.25, p. 215) precisely these areas were particularly subject to volcanic activity, as shown, among other things, by tremendous volcanic effusions. The most recent volcanic activities in Mongolia have not yet been adequately studied. Well-preserved volcanos are to be found especially in the eastern parts; but they exist also in central Mongolia, and these Central-Mongolian volcanoes were described by Potanin as early as the past century. In the Chingai one can find, within the Dzapchin area, a number of moraine systems of different age covered over with layers of basalt. Even more recent than the basalts of this region are the volcanos of the Dariganga in the southeast. Like some of the groups of volcanos in northern Manchuria they were probably still active in historic times. Of particular interest are the evidences of vigorous post-glacial tectonic activity (cf., among others, Kuznetsov, No.25, p. 173 ff.),

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where, especially in the "Great Lakes" depression, extensive movements of the block type prevailed. In the Zagan-shibetu chain, east of the Saljugem, quaternary pebbles were raised to a level of 500 to 600 m. above the present bottom level of the depression. Generally speaking, however, the post-glacial movements in the West-Mongolian inter-mountain depressions seem to have been of a minor nature.

So far as can be judged from the more recent investigations, the ice-time climate was slightly more humid than the present climate; and the relative humidity of the air, especially, was very much greater than it is now. Even in the

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at present extremely dry Gobi-Altai there occurred a considerable amount of glaciation in some localities, as for instance on the Gurban-bogdo and the Gurban-sajchan. The rivers carried more water, and the processes of erosion and wash-out were more forceful. Glaciers in the Mongolian Altai attained lengths up to 140 km. and, in some instances, a thickness of 500 m. (cf. No.61). The West-Mongolian Altai, especially, exhibits pronounced glacial reforming of surfaces. In the Changhai it was the top of the northern slope where the glaciation was most powerful; and likewise in the Kentai, where the snow limit probably was somewhere between 1900 and 2000 m., have been found, according to the more recent reports of Mongolian investigators (No.64) considerable traces of glaciation. According to Murtsaev (No. 25, p.202 ff.) it would be premature to compare the instances of glaciation in Mongolia, and those of Inner-Asia in general, to those of more fully known areas such as the Alps, as did, for instance, Moltchanov, Grand, Berkey, and Morris. It seems assured, however, that there were two periods of glaciation, the former covering very much more ground than the second. Ivanov (No.51)counts three glaciation periods in the northeastern part of the Mongolian Altai, and he attempts to connect them with different phases of uplift. It has not been possible, so far, to demonstrate that there were several glaciation periods in the Gobi-Altai, due to the fact that glacial deposits there have not been found extant with sufficient completeness. The amount of present glaciation is very slight, and is limited essentially to the northwestern mountain frame (Tabun-bogdo, Munch-casatu, Charchira, etc.). The biggest ice current of the Mongolian Altai (the Potanin Glacier) is 20 km. in length. A snow field, of small dimensions, is to be found in the Changai only on the Otchon-tengri, whose summit has an elevation of 4031 m. Neither glaciers nor perpetual snow are to be found in the Kentai.

Recent researches have rendered evident that there occurred during the second half of the mesozoic period a modification of the climate in the direction of increased dryness; but there was alternation of relatively dry and relatively humid periods. Studies made by Russian palaeontologists have shown that during the upper cretaceous period a fair abundance of water was to be found in the depressions. During the tertiary periods, however, the dryness of the climate became

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very much more pronounced. The question of the recent drying-out period as studied above all by F.K.Morris, N.Horner, F.Chen, and B.B.Polynov (cf. No.50 and 59). During the early part of the post-glacial period, particularly, the aridity of this region became abruptly intensified, a fact that can be clearly discerned, among other things, in the net of water courses: the lakes became smaller, the rivers were choked off, and the desert areas spread out. These developments were more strongly accentuated here than in the eastern or the northern areas. There is difference of opinion, also with respect to Mongolia, concerning the assumed recent spread of aridity in the territories of Central Asia. Berg, Murtsaeve, and other investigators point out that the assumptions in favor of such increase of aridity are very unreliable and are to some extent based on unverifiable information furnished by native residents; and the assertion that an increase of the salt content of the lakes has been demonstrated is taken by these authors as still unproven, since they consider that many of the samples had been taken under unequal conditions, i.e. in some instances near shore, in other from the middle of the lake, and also during different seasons of the year, without making allowance, in the conclusions, for these highly essential differences. Murtsaev also declines to accept the contentions to the effect that recent cropping out of the Central-Asiatic mountain ranges must have accelerated the increase of aridity; and he considers that those uprisings were too slight to have produced the results in question. K.K. Markov shares with Murtsaev the opinion that although the post-glacial change of climate in the direction toward intensified aridity there is no definite proof of a recent drying-out period, and that, in fact, any such assumption has been disproven by recent results of investigation. The same as de Terra did with respect to other Central-Asiatic territories, Murtsaev believes that the heavy spread of deposits of rounded material must be held responsible for the lowering of the ground-water level and for the dying out of the lower course of some of the rivers. Moreover, during historic times man has in a number of localities caused changes to arise as result of irrigation works, changes that might be erroneously ascribed to climatic conditions. I.M. Krashennikov and other botanists hold the opinion that historic analysis of the development of the flora of the areas in question (e.g. along the northern edge of the Gobi) does not in any way indicate

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a modification of the climate, during historic times, in the direction of increased aridity. Similar conclusions were reached also by the botanist A.A. Junatov (Yunatov ?) (No.52-55). According to him the maximum of desiccation and desert formation dates back several thousand years, as shown, among other things, by increased renovation of forest growth in northeastern Mongolia, by the advance of forest growth into the steppe areas, and by extant remnants of polyhedrons of desert land with desert "varnish" in the thin layers of soil of grass-covered hamadas of the Central Gobi.

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The marginal mountain ranges catch the moisture: and an annual precipitation of 250-300 mm. -- such as is the average in some areas -- it is received only in those marginal areas of Mongolia which are located in the vicinity of these mountains. In discussing the summer monsoons of East-Asia (No.49) Haude finally proceeds to comment on his observations in Mongolia and his earlier publications, and thus also the precipitation regime of the territories in question. Observations made as early as the summer of 1927 in the eastern steppe zone of the Gobi had shown that there, at any rate, the mechanism of the summer monsoon is of a type that proceeds in individual, separate thrusts, so that there is no occasion whatever to speak of a continuous "rain-bearing" monsoon current. Even at that early time there was an impression that the more deeply penetrating humid "monsoon current in vicinity of the ground" should be regarded as due to disturbances of the general circulation. The kite ascents effected in later years made it possible to clear up some of the partial problems. It was found that nearly all of the precipitation of summer rain in the eastern Gobi "was connected with irruptions of relatively cold air after days of heavy radiation combined with high day-time minimum temperatures." The cold masses of air either come in from northern Sibiria, moved by the Sibirian Polar front, or else from the western marginal areas of the Pacific Ocean. At all events, these summer precipitations occur in connection with the passage of cold fronts put in motion when they entered the precincts of a frontal zone. A prerequisite of any sort of heavy rainfall in the areas in question is the presence of sufficient water vapor in the atmosphere, and there must be, especially, sufficient vertical movement also at higher altitudes, so as to produce the necessary moisture lability in the structure of the atmosphere. The humid masses of air move in chiefly from the south and southeast and, at the higher altitudes, also from the west.

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The requisite amount of vertical movement is dependent upon development of a frontal zone. "Observations in the eastern Gobi lead to the conclusion that at least the instances of heavy rainfall there occur at times when the frontal zone recedes toward the south, so that there will be an inflow of air of a relatively lower temperature. These precipitations occur in combination with strong vertical movements and thunderstorms, and are strongly indicative of phenomena of subversion following a state of lability." In the event of a southward shift of the frontal zone, therefore, and upon an invasion of relatively cold air, they are classifiable as "instability" rains.

All of the climatological studies published so far suffer from a lack of reliable and sufficiently extensive data; and at the present time conditions are still unfavorable to investigations of this type, although during the last 15

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years a number of meteorological stations were established both in Outer and Inner Mongolia, so that it has been possible now to obtain a considerable amount of information based on systematic observations, or else to prove or disprove some of the older opinions. More or less casual meteorological observations covering short periods of time are of slight significance especially in such strongly continental areas as Mongolia; and the recent observations have shown, for instance, that in successive years the precipitation in places like Ulan-Bator has varied from 137 mm. to 381 mm., but at Kobdo, for instance, from 178 mm. to 68 mm. Recent studies (A. A. Kaminskiy et al.) have, as shown by Murtsaev in his treatise, demonstrated the correctness of Baude's view that so far as Mongolia is concerned there is no continuous rain-bearing summer-monsoon current. The so-called "monsoon trends" are during the summer months less pronounced than the northerly and westerly winds.

Responsibility for changes of weather and for summer precipitation is ascribable first and above all not to the monsoon circulation but to cyclones whose paths usually lie north of the Tannuola, etc. According to recent investigations Föhn winds are strongly developed epsecially in the vicinity of Kobdo. In that locality it was possible to observe during a twelve-hour period in the winter temperature increases of more than 23° and a correspondingly great decline of the relative humidity. The driest of the deserts are probably those of Innter Mongolia, where along the lower Edsin-gol, for instance, the average annual precipitation is very likely not more than 25 mm. The extremely pronounced continental nature of the climate, the

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extremely cold winter (absolute minima at Ulan-Bator, Kobdo, Etc. -47° to - 48° C.), and the very thin cover of winter snow bring it about that in Mongolia perpetual frost on the ground extends farther south than elsewhere. The southern limit of perpetually frozen ground probably runs from Chubsu-gul across the northern Changai, and then south from Ulan-Bator and the Kerulen to the Smon Munku-chan, and finally northeastward as far as the Buir-nur. Similarly the northernmost dry desert of the globe is probably located in Mongolia, in the western part, in the depression of the "Great Lakes," i.e. approximately at 50° northern latitude. The most recent investigations have shown, however, that in Outer-Mongolian territory the Gobi is, for the greater part, not a desert, but is characterized primarily by desert-steppes and semi-deserts. Very strongly desert-like is the Transaltai-Gobi, which has the distinguishing traits of a pebble desert. The nature of its soils was previously referred to in the Section dealing with maps. In the Mongolian, and to extent also the Gobi Altai, the chestnut-colored soils predominate. In the territories of the semi-deserts predominance goes to brown carbonate soils with little humus, the solonets-type of soils, takyr tracts, and sands. The sand areas are in most instan-

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ces not of very large extent. The largest of them are those of the "Great Lakes" depression, which cover a maximum of 4,000 sq. km., while only two of the sand areas so far discovered in the Gobi cover an area of more than 1,000 sq.km. Piled-up-sand areas of 2-3 m. diameter are of very frequent occurrence in the Gobi. Chains of barchans (crescent-shaped dunes) are relatively rare. In many instances the sands are held in position by plant growths.

The waters of Mongolia have not yet been investigated very much. Among the large lakes the Ubsa, the Chirris, and the Orok-nur are salt lakes, while the Chubsu, Chara-ussu, and the Durga-nur are sweet-water lakes. Of the Edsin-gol terminal lakes the Gaschun is salty, and the Sogo has sweet water. The watershed divides are in many instances very vaguely defined. Most of the valleys consist of valley stretches of unequal age. The rivers are ice-covered throughout many months of the year, and some of them freeze all the way down to the bottom. The higher waters of the summer come in sudden spurts, and they are heavier than the high water flow of the spring season. Taken all in all there are great variations

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in the amount of water carried. In some localities the rivers are of importance for irrigation. At the present time there is no noticeable decline of the water net in Mongolia. During the summer months steamers travel on the Selenga as far as Suche-Bator, and on the Chubsu-gul between Changa and Chadchal. As to the rest, the rivers and bodies of water are of no importance for shipping, though in many localities they have importance for fishing. The salt lakes are in some localities exploited for the production of salt.

A brief report concerning the vegetation was included under Section I, in connection with comment upon the more recent general and special treatises. It should be emphasized once more at this point that in the northern marginal areas there occurs a transition from the mountain forests of the Sibiro-Mongolian border mountains to the steppes and desert steppes of the Gobi. In the interior of East-Mongolia a meager type of Artemisia steppe predominates, which, however, also prevails to some extent in the east, i.e. in the western Barga. This core region of the desert steppe is surrounded, in consequence of the greater amounts of precipitation, by a steppe zone of stipa and festuca species which -- due to ground water obtained in wells, and due to the presence of slightly salty lakes that are periodically or at least occasionally filled with water -- furnish a basis for the nomadic pasture economy of the Mongolians. Characteristic for the barchans of northeastern Mongolia (i.e. the foreland of the middle ranges of the Great Chingan) are groves and thin forests of pine (pinus silvestris L. var mongolica Litw.), whose ecological requirements have been studied, above all, by Plaetschke (No. 30) and Fochler-Hauke (No. 15). Nowhere in this region do the pine trees grow and solidly packed old

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sands or on solid rock. The fact that they are tied to dunes and recent sand drifts is no doubt ascribable to the particularly favorable conditions of the location, i.e. relatively good storage of ground water combined with relatively slight evaporation, as might be expected in view of the ready seeping of water through the relatively loose sands. The more closely crowded together the dunes are, the denser will usually be the pine groves, and vice versa. Pine groves often are encountered where wind-blown sands are piled up on otherwise treeless slopes of steppe land. Pine growths are being crowded out considerably in the Barga as result of human interference, e.g. hunters for ground hog and Chinese mushroom gatherers who cut down the trees for

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firewood, or else chopped down by the native Tungusians ("Solonen") and hauled away to Hailar.

The most important of the recent studies on the geography of plant-life in Outer Mongolia were contributed by A.A. Junatov (Yunatov) (No.52-55), on which to some extent Kürtsaev also depended in determining the divisions of his "natural districts." The mountain-forest steppe, which corresponds to the same type of formation in Trans-Baikalia, is particularly wide-spread in the Changai and Kentai areas, where it is of economic importance; but in the Mongolian Altai this type of formation occurs only in narrow-strip islands. Of significance as a transition zone to the Gobi is the so-called high steppe zone, the latter being the main pasture land of the Mongolians. According to Yunatov there exist in Outer Mongolia appr. 2,000 species of plants. Most numerously represented are, as a rule, the boreal and the Sibirian species, with only a small number (8-10%) endemic species. Recent studies confirm the older established views according to which the desert-steppe flora consists chiefly of xerophili descendants of Alpine and sub-Alpine complexes. Yunatov and V.I. Grubov divide the plant-life of Outer Mongolia into 16 flora-districts. The total forest area of Outer Mongolia probably covers an area of appr. 112,000 sq.km., i.e. slightly over 7% of the territory of the Mongolian People's Republic.

There is a great amount of mutual penetration of genetically discrepant types of flora and fauna, i.e. the northern (Sibirian and Altaic) elements penetrate, within the mountain areas, far into the south. According to Kotschetkow (Kucheruk ?) and other investigators (cf. No. 51, p. 310ff), the steppe fauna consists in the main of endemic Mongolian elements, while the forest animals are of relatively recent date and conform to the neighboring Sibirian-Trans-Baikalian species.

4. HISTORY, POPULATION, AND COLONIZATION

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67. Bleichsteiner, R.: Mongolen (Mongolia). (In: Grosse Völkerkunde, Vol. II, Leipzig 1939, 71 ff.).

68. Bosshard, W.: Kühles Grasland Mongolia (Cool Grassland Mongolia). Berlin 1938. New Ed. Zurich 1949. 217 pp., 2 Maps. Illustrations.

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69. Buryat-Mongoliya (30 Years under Soviet Rule). Collected Vol.,Ulan-Ude 1947 (Russian).

70. Christensen, H.H.: Zajagar. Stuttgart 1938.

71. Davidovich, D.A.: Colonization in Manchuria and Northeast Mongolia, publ. by the "East-Institute." Moscow 1937 (Russian).

72. Eberhard, W.: Kultur und Siedlung der Randvölker Chinas (Culture and Settlement of the Marginal Peoples of China). Leiden 1942.

73. Elckstedt, E. v.: Rassendynamik von Ostasien, China und Japan, Tai und Kmer vonx der Urzeit bis heute (Dynamics of the Races of East-Asia, China and Japan, Thailand and Cambodia, from the Primitive Times up to the Present). Berlin 1944.

74. Ekvall, R.B.: Cultural Relations on the Kansu-Tibet Border. XIII and 87 pp. Chicago 1939, University of Chicago Press.

75. Fochler-Hauke, G.: Stärke und Schwäche der mongolischen Steppennomaden (Strength and Weaknes of the Mongolian Steppe Nomads). In: Die Mandschurei, Heidelberg 1941, 368 ff.).

76. Fox, R.: Chengis Khan. New York 1936. XIII and 285 pp. (English.)

77. Fulonggha: Yeghe Mongol-on Yuwan Olos-on Sodor (History of the Great Mongol Yuan Nation). Kalgan 1936, Chahar Mongol Library. XX and 248 pp.

78. Glasenapp, H. v.: Der Buddhismus in der Krise der Gegenwart (Buddhism in the Crisis of the Present Era). (Saeculum IV, H. 3, Freiburg im Breisgau 1953.)

79. Grenard, F.: Genghis-Khan. Paris 1935. 206 pp. (French.)

80. Grousset, R.: L'Empire des Steppes. Paris 1941 (French).

81. Haenisch, E.: Die Kulturpolitik des Mongolischen Weltreiches (The Cultural Policy of the Mongolian World Empire). (Vorträge und Schriften der Preussischen Akademie der Wissenschaften 17, Berlin 1943.)

82. Haenisch, E., and H.H. Schaefer (Editors): Das Mongolische Weltreich I (The Mongolian World Empire I). (Quellen und Forschungen, Leipzig 1941.)

83. Haenisch, E.: Monghol un niuca tobca'an, Textrekonstruktion. (The secret history of the Mongols, translated by E. Haenisch). 2nd Ed. Leipzig 1948. (For review cf. Saeculum 1952, H. 2, p. 219.)

84. Heissig, W.: Die Mongolische Geschichtsschreibung im 18. und 19. Jh. (Mongolian Historical Writings during the 18th and 19th Cent. (Saeculum 1952, H.2, p.218 ff.)

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85. Heissig, W.: Die Pekinger lamaistischen Blockdrucke in mongolischer Sprache (The Peking Lamaistic Block Prints in the Mongolian Language). (Göttinger Asiatische Forschungen, Vol. 2, Wiesbaden 1954. 250 pp., Table).

86. Herrmann, A.: Landbeziehungen zwischen Orient und China (Inland Relations between the Orient and China. (Posthumous Manuscript.)

87. Yakubovskiy, A. and B.D. Grekov: The Golden Horde. Leningrad 1937. (Russian.)

88. Kozmin, N.N.: K voprosu o turetskogo-mongolskom feodalizm (On the Question of Turco-Mongolian Feodalism). Leningrad-Irkutsk 1934 (Russian).

89. Kudrantsev, F.A.: Istoriya Buryat-Mongolskogo Naroda (History of the Buryat-Mongolian Nation). Moscow 1940 (Russian).

90. Lattimore, O.: Inner Asian Frontiers of China. (Amer.Geogr.Soc., Res.Series 21, XXIII and 585 pp., 11 Maps, New York 1940 (English).

91. --: The Mongols of Manchuria: Their Tribal Divisions, geographical distribution, historical relations with Manchus and Chinese, and present political problems, New York 1934. 311 pp., Maps, and Bibliography (English).

92. Leimbach, W.: Die Sowjetunion. Stuttgart 1950. 163 ff;, 174, 191 ff., 206.

93. Lévine, J.: La Mongolie: Historique, géographique, politique. Paris 1937. 252 pp., Maps (French).

94. McGovern, W.M.: The Early Empire of Central Asia. Chapel Hill 1939. X and 529 pp., Maps, Bibliography (English).

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95. Montell, G.: Durch die Steppen der Mongolei (Through the Steppes of Mongolia). Stuttgart 1938. 176 pp.

96. Riasanovsky, V.A.: Fundamental Principles of Mongol Low. Tientsin 1937. (Engl.).

97. Schwind, M.: Die Goldene Horde (The Golden Horde). A contribution to historical geography. (Geogr.Helvetica, H. 4, Zürich 1952, 350 ff.).

98. Spuler, B.: Die Mongolen in Iran (The Mongolians in Iran). Leipzig 1939.

99. --: Die Goldene Horde. Die Mongolen in Russland, (The Golden Horde. The Mongolians in Russia)(1223-1502). Leipzig 1943. 556 pp. 2 Maps.

100. Vladimirov, B. Ya.: Die Gesellschaftsordnung der Mongolen (The Social Order of the Mongolians). 223 pp. (Russian.) Translation: Vladimirov, V.Y.: Le régime social des Mongols. Paris 1948 (French.)

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101: Walker, C.C.: Jenghis Khan. (London 1939, English.)

102: Yano Jinichi: Kindai mōkoshi Kenkyū (Studies on Recent Mongolian History). 3rd Edition Tokyo 1940 (Japanese).

103: Duman, L.I.: The Agrarian Policy of the Ch'ing Dynasty in Sinkiang toward the Close of the XVIIth Cent. Moscow-Leningrad 1936, Academy of Science, 256 pp. (Russian).

The studies by Eberhard (No.72) and Eickstedt (No.73) throw light also on the migrations of the steppe populations in the Mongolican Central-Asiatic areas, as well as important political-historical implications. Particularly meritorious is the translation, with comment, of the "secret history of the Mongols" (dating back to the 13th century) by Haenisch (No.83). This history reveals the side-by-side existence of tribes living on the forest-steppes, hunter stems, and cattle-raising nomads. Heissig (No.84) has made an important contribution dealing with methods and aims of Mongolian historic writings of recent times, a contribution which, like that made by Haenisch, is all the more valuable because up to that time little was known, in the Western countries, concerning the historic writings of Mongolians. An account of legendary history covering the times before Genghis Khan is prefixed to a History (No.77) of Mongolia, planned at that time and written during the Japanese occupation by a Tschahar (Chahar?) scholar, to a considerable extent primarily on the basis of Chinese sources; and this legendary account is followed by a treatise on Ghengis Khan and his descent, which takes up more than half of the volume. Relatively short chapters are devoted to the reigns of Ogodai, Gujak, and Manglai. Many of the geographic names mentioned are cited both, in Mongolian and Chinese, in this manner facilitating orientation. The most important of the dates are given according to the western calendar as well as in terms of Tibet-Mongolian animal and color cycle. The account given brings out clearly the different phases of the Mongol conquest of China, and also the differences of policy adopted by the conqueror in dealing with the former Manchu Dynasty (China) north of the Hwang Ho and the Sung of Central China. Concerning the highly controversial legitimacy of the birth of Dschotschi (Dchotchi?), the older son of Ghengis Khan's wife, the book defends the mother's honor, who, as the book states, did

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not have intimate relations during her captivity with her abductor. This emphasis on the older son's legitimacy is all the more worth noting since generally -- in

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view of the large number of then customary abductions of this sort -- no particular importance was attached to the question of legitimacy, provided that the son of doubtful descent did his part in guarding the herds and participating in the warlike enterprises of the mother's rightful husband. It is an oustanding characteristic of these historical accounts that they glorify the past of the Mongolians, a trait generally encountered in Mongolian historic writings.

An interesting account -- though at some points it is not dependable and is based exclusively on the older and on one-sided sources -- of the world empire founded by Ghengis Khan is the treatise by Fox (No.76), which furnishes a vivid picture of the interminglin and side-by-side of warfare for booty and iron measures of pacification, dissolution of tribes and founding of a world power, local unrest and protection of traffic routes across the whole continent. Like E. Huntington and Mackinder, Fox recognizes the key note of Asiatic history in the ceaseless strife between the herdsmen of the pasture lands and the agricultural peasants. According to Fox the conquest of China was brought on by the increasing anarchy in that country and by the compelling necessity of supplementing the products of a nomad economy with those of a settled population. He states that the peace which the nomads enforced in Central and Eastern Asia made possible, during the 12th and 13th centuries, a commercial exchange between China and the West such as in some respects bore the characteristics of a world commerce. This commerce, he says, contributed toward establishing in Europe an influential and wealthy commercial community, and in this manner likewise toward the independence of the cities and the dissolution of the faudal structure, while in China this exchange of goods and ideas, though unquestionably of importance, failed to exert an influence upon the social order. The novelty of Fox's work must be seen in his effort to bring the Mongolian world empire more closely than heretofore into the developments of world history in general.

Of importance are also some of the other recent studies devoted to the Mongolian empire and to Ghengis Khan in particular, e.g. the important, earlier book by B. Ya. Vladimirov (Genghis Khan, Moscow 1922. English Translation by D.S. Mirski, London 1930); and there are also the studies by Grenard (No.79) and Walker (No. 101). O. Lattimore has given detailed critical discussions of these books (Pacific Affairs 1937, p. 462 ff., and 1940, p. 222 ff.), discussions which must

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likewise be regarded as important contribution on the subject.

The book by Walker, a Canadian officer, concerns itself primarily with the campaigns of Chengis Khan, whose successes were due largely to a combination of great mobility and strict discipline, and to the use of skilled reconnaissance agents, methods generally familiar in those days in steppe warfare. Chengis Khan exhibited a particularly high degree of skill, however, in adapting this mode of warfare to conditions in agricultural countries that were being defended from walled cities. Whenever necessary he made use,in his sieges, of the science of Chinese and Persian fortification engineers, and he never subordinated his strategic aims to the requirements of siege tactics. But Chengis Khan was by no means merely a "warrior of the steppes:" his personality is explicable only in terms of a complex interplay of forces and experience derived from nomadic, semi-nomadic, and ex-nomadic elements with elements derived from habits such as go with a settled mode of life. The maps that accompany Walker's treatise furnish ready insight into the military and geographic problems with which they Great Khan had to contend.

Grenard makes it plain that Chengis Khan was not a phenomenon sui generis, but only the most outstanding of his kind in the nomadic life of Asia. It was only gradually, by dint of intelligence and loyalty toward the minor tribal chiefs of the much fragmented Mongolian race, that he was able to bring the Mongolians together in large roup associations and to obligate capable military leaders permanently to his service. Due to his energy and discipline, qualities he was able to impart to his generals and descendants, the precipitously advancing Mongolians were not merely a series of ungoverned hordes, as has been insisted so frequently, but, all excesses notwithstanding, a well-ordered and ri idly controlled army. No other assumption could make it seem reasonable that Subutai, with only 30,000 warriors, should have been able to advance through the entire continent as far as Silesia. Like other "barbarian" army leaders before and after him he understood that it was desirable to govern the conquered agricultural empires from a distance, so as to avoid the danger of assimilation. Lattimore is correct in pointing out that Grenard, in his excellent works, does not sufficiently bring out the fact that the Mongolians, like other nations of the steppes, did not have by any means an exclusively nomadic economy and mode of living, but that to some extent,and at different times, hunting

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and agriculture were of some importance and that, above all, the economic resources derived from herding activities were being supplemented by commerce, raids, and subsidies paid by threatened or subjected agricultural areas. When Ghengis Khan began to lay the foundation of the world empire, North-China was to some extent under the domination of the Manchurian Yu-Chen dynasty of the Chins, whose rulers forced

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subsidies from the Chinese Sung Dynasty in the South, while at the same time making themselves such payments to the Mongolian tribes of East-Mongolia, so as to maintain peace in these exposed border areas. The western part of Mongolia was ruled by a Turco-Mongolian federation. Ghengis Khan was at first operating between these two main forces and then demonstrated the ability to exploit for his own benefit not only the force of the strictly nomadic tribes, but also that of the border tribes, who were more strongly exposed to the influence of the agricultural civilization of China and Persia. In essence, therefore, the conquests of Ghengis Khan were in part the result also of his clever policy of exploiting, in a competent manner, the existing social and economic and political conditions prevailing within his ken, a policy such as was pursued later also by Nurhatsi, the great unifier among the Manchus.

Haenisch (No.81,82) and Grousset (No.80) deal from new points of view with the organization and structure of the Mongolian Empire. Unlike most other founders of great empires, the Mongolians failed to develop any culturally creative forces, i.e. they failed to create a "culture" in the narrower sense of the term. They did succeed, however, in maintaining themselves none the less as a "nation," i.e. as a self-conscious ethnic body, when the unified states created by them had fallen apart. They made up for the lack of artisans of their own by using Chinese and Turkestani-West-Asiatic artisans; and they obligated Turkestan and Chinese experts to offset the lack of officials to govern the vast empire and to maintain the commercial and clerical personnel required to keep the highly complex economic mechanism functioning. Tolerance was practiced with respect to the various religious communities; and finally even the spread of Confusianism was encouraged, because its was recognized to be effective as a force supporting the State. For similar utilitarian reasons the Mongolian Government also encouraged the studies pursued by Western merchants and mission scholars. A small conservative stratum of the population recognized the dangers implicit in this attitude for Mongolian characteristic traits and

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thus for the strength of the Mongolian State; and these groups occasionally incited the population toward destruction of great masses of Chinese residents. Before very long, however, Chinese civilization had acquired such powerful influence that finally Kublai Chan himself became one of its great promoters.

Schwind (No.97) concerns himself in his historico-geographic study with the great treatise by Spuler (No.99) on the subject of the "Golden Horde," a treatise based on exploitation of a number of important Slavic, East-Roman, and Southwestern-Asiatic sources; and for purposes of comparison he also draws upon a number of more or less recent Russian publications (No.66, No.87). It was not until quite recently that any large amount of attention was devoted to this important part of the area under Mongolian power. Chengis Khan turned over to his oldest son the Kypčak, i.e.

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the country of the so-called "Golden Horde," a territory which extended eastward as far as Lake Aral and included the important oasis city of Choresm. In the south it largely extended to the upper course of the Kura and in part also the Terek River. Further west it reached the northern shore of the Black Sea, although the extent of this domain was highly variable in the northwest and north. Podolia was included for a time; and in the north the boundary line probably followed the watershed divide between the Volga and the Dvina River. The center of this gigantic domain of appr. 3 million sq.km. was the capital city of Sarai, founded by Batu, which had originally been mobile, in the form of a tent city grouped around the gold-plated tent of state inhabited by the ruler (orda aurea, hence "Golden Horde"). For compelling reasons this city of tents was later changed into a city of solid houses; but in this connection the location of Sarai was shifted from its mobile location (several days' journey above the mouth of the Volga) to the vicinity of the bend of the Volga, a point affording better control over the great trade routes to Kiev and the Crimea. The same location is at present occupied by the city of Tsareva.

This city was inhabited by a population of rigidly defined social strata and composed of highly varied ethnic elements (apart from the Tatar city itself there were the city quarters for Russians, Circassians, Byzantines, and so forth). Excavations have furnished evidence of the imposing dimensions of the cities public squares, streets, mosques, and baths; and the population in 1333 is reported to have

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been not less than 200,000. The population throughout the Kypčak was very much diversified ethnically; but gradually the principal racial contingents came to be quite closely intermingled -- especially the Mongolian and Turkish groups of the Chan with the Turkish groups previously settled there, thus producing the Tatar elements, who finally embraced the religion of the Islam. As a result, Islamic-Oriental cultural elements have been of importance to this day from Kazan to the Crimea and all the way to Tannu-Tuva. In their dealings with any of the other nationalities the Tatars showed themselves very broad-minded. They provided safety for the old-established routes of commerce and gave permission to the cities of Genoa and Venice for the establishment of transport bases (especially in the Crimea). New routes of commerce were established: and new cities were founded notwithstanding the at first still nomadic methods of cattle-raising, which made an expansion of agriculture at best a very gradual process, and notwithstanding the nomad's aversion to large-scale settlements in permanent locations. These new cities, to be sure, were always in a large measure dependent upon the support of non-Tatar elements (e.g. Astrakhan, Bulgar). The city settlements were distinguished among other things by their citadels (Russian: kreml'), city walls, and summer dwellings outside the city walls. The rule of the Tatars, which lasted until 1502, had the effect of isolating the development of Eastern Europe more or less definitely for more than five centuries from that of Western Europe and of stimulating the Russians to establish a world power of their own - a fact that can be found emphasized in modern Russian historical writings (No.88).

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Schwind supplemented his study with a map based on the work of Spuler; and the extent of the areas cover by the Kypčak, as well as the most important of the routes of commerce, are shown on that map. Spuler (No.98) also has devoted a detailed treatise to the Mongolian rule in Iran, a regime which disintegrated subsequent to the death of Timur. Lattimore (No.90) gives an eminently expert analysis of the historical movements of nations in the marginal regions between Manchuria and Tibet, basing his work on his own extensive travels as well as upon Chinese and other sources. He investigated the geographic conditions under which those movements took place, and he cites numerous historical examples that have a bearing on present occurrences and problems; and in doing so he devoted special attention also to the Mongolians, among other nationalities. His interests was centered above all on the ear-

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ly cultural differentiation between North China and Mongolia, upon the social and economic differences and tensions between the Chinese agricultural peasants and the Mongolian tribes of the steppes, and also upon certain phases of the history of these tribes and the functional explanation.

Of importance, likewise, is the treatise by McGovern (No.94), especially some of the chapters that afford a good insight into the history of Mongolia; because it is an often forgotten fact that the steppe nations living in North China originally were hot horsemen, but presumably hunters and tillers of the soil, and did not begin until about 400 B.C. to take on the mode of living of cattle-raising mounted nomads. In contrast with Lattimore Levine (No.93), in the relatively less specific discussions contained in his volume, fails to become aware of the functional relations of the Mongolians as a shepherd nation and their geographic environment, and of the high degree of complexity of administrative principles in the Mongolian territories under the Manchu rule, where it became necessary to take into account not only the tribal organization of the Mongols and the Lamaist Church, but also the exigencies imposed by the Chinese Empire ruled over by this foreign dynasty and the facts arising out of the Chinese relations of barter trade. Ekvall, in his book on cultural relations in the Kansu-Tibet Border Areas (No.74) treats among other things of the multiplicity of contact strata between the Chinese elements of the population on one hand and the Tibetans and Mongolians on the other, and the difficulty of properly recognizing the development of this process and of evaluating the resultant forces. From the book by Duman (No.103) one can acquire a new insight into the character of the West-Mongolian Dzungars and into the nature of the empire created by them during the 18th century between the Altai and the Tienshan, and among other things also concerning policy adopted with respect to them by the Manchu Dynasty. The collapse of the Dzungar empire since the middle of the 18th century

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became an occasion of numerous tribal wars which were extended also into East-Mongolia and made it more and more difficult for the Dzungar rulers to utilize in their own behalf the economic power of the Turkestan oasis peasants without losing the military reservoir provided by the corresponding Mongolian tribes. When the Manchus conquered the oases of Sinkiang they broke the backbone of the Mongol-Dzungar rule.

Vladimirov (No.100) wrote his very valuable book on the "nomadic

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feudalism" of the Mongols some years of the period covered by this report; but although it was published incomplete after his death it is desirable here briefly to sketch its contents (cf. detailed review by H. Moore in "Pacific Affairs" 1936, p. 125 ff.). According to Vladimirov there existed among the Mongols ever since the early times -- although the fact must seem surprising in view of their nomadic type of economy -- a feudal form of organization of the social and economic relationships. The author states that although they did not have any law of landed property in the Western sense of the term the routes followed in their seasonal migrations were definitely determined, so that it was a question of migrational areas that had at first belonged to individual tribes, but subsequently got under the control of individual persons, with the result that finally the subordinate groups of herdsmen were subject to the will of their "feudal lord," and were not at liberty to move into any other pasturage territory. The same text remarks further that a break-up of the family and tribal organization occurred when individual owners of herds were compelled, as their herds grew too large, to detach themselves from their own group or, in times of danger, when the minor herd owners placed themselves under the protection of the more powerful. In this manner, we are told, there developed a hierarchy of power analogous to that of the feudal system ever since the 11-13 centuries; and the feudal empire of Ghengis Khan is taken by the same author as owing its existence in part to the gradual extinction of the exogamic tribal organization of the hunting and cattle-raising nomads. And we are told further that although in that empire the tribal influences had to some extent been still of considerable importance Ghengis Khan had for military reasons relied, in many parts of the empire, in many instance on personally obligated vassals as local overlords in preference to the tribal leaders. According to Vladimirov the collapse of the Mongol Empire was for the above-mentioned reasons followed by a second phase of feudalism during which it reached its culmination, during the time from the 13 to the 17th century, when the social hierarchy (vassals, common people, slaves) became to be even more sharply defined as result of numerous struggles among the different "feudal overlords". During this period, he goes on to say, the Lamaistic Church attained its importance as a great feudal institution with spiritual and worldly power. We are told further that the third phase, beginning the latter

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part of the 17th century, marked the beginning decline of Mongolian feudalism, as

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result of the military inroads, commerce, and colonizing efforts of stronger powers, i.e. the Chinese and the Russians. Vladimirov's views are based upon an extremely rich bibliography.

Similar views are advocated in the book by Kozmin (No.88). Lattimore (cf. Pacific Affairs 1937, p. 464 ff.) voices criticism against these efforts to make out a case for the existence of genuinely feudal conditions; and according to him these conclusions go too far. He claims that the main emphasis was at all times upon the tribe, not so much in a genealogical as in a political sense, and that the territorial conceptions always remained subordinate to the tribal conception. In times of insecurity, states Lattimore, the first endeavor had been to keep the tribe together, irrespective of territorial considerations. According to his view it was only during the times when closely unified empires were formed (Mongolian, Chinese, and others) that the territorial considerations exerted a more powerful political influence than the tribal considerations, without ever being able quite to overcome the effects of the latter.

The most comprehensive account of the tribes and their subdivisions, of the geographic spread, and of the historic relations between the Mongols of Manchuria and the Chinese, the Manchus, etc. is furnished by Lattimore (No.91). During the epoch of the Mongolian world empire the spread of the Mongols on Manchurian territory reached its greatest extent, subsequently shrinking together again for a number of reasons. Still settled in the north, in the Nonni region, are remnants of the "Yeghe Minggan," who are kin to the Oelöds and were shifted at one time from western Mongolia. More important than the others are the different tribes and "banners" of the "Jerim" League, which must be regarded as the easternmost fragments of the Mongolian population. In Jehol the Chosoto and the Cho-ota associations are specially worth mentioning. As result of the rapid forward thrust of the Chinese agricultural colonists these Manchuria Mongols have during recent years been either assimilated or pushed back farther and farther. Many of their groups have turned to settled life or have gone over to a partially agricultural life. The Mongols living outside the Autonomous Inner Mongolia, i.e. in part within the northeastern provinces of China (appr.300,000) are most likely to disappear within the next few generations completely among the Chinese population.

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Estimates of the number of Mongolians differ widely. Bleichsteiner (No.67) places their total number of only 2.6 million, while others arrive at a figure of appr. 4 million, inclusive of Kalmucks. The most reasonable assumption would seem to be that the total is about 3 million, ab. 75% of these being East-Mongolians, who can be subdivided further as follows: the Khalka Mongols of Outer Mongolia (this being the largest group); the previously mentioned associations in Man-

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churia; the Barguts of the Barga; and the Chahars, Tumeds, Alashan Mongols, Ordos, etc. of Inner Mongolia. The West-Mongolians, who dwell chiefly in Dzungaria and continuous areas, include the following subdivisionsx, among others: Durbed, Olöeds, Kait, Minghit, Tsakhachin, and Torgud. The latter include the Volga-Kalmucks and those of the Autonomous Kirghiz Republic of the Soviet Union, a total of about 130,000. It seems very likely that the Volga-Kalmucks wandered away, in part, toward the east and to some extent were resettled during the last war, since their autonomous republic has been dissolved. The North-Mongolians, or Buryats, hardly comprise more than a quarter of a million; and even in the Autonomous Buryat-Mongolian Republic of the Soviet Union they constitute only a minority of the population. Leimbach (No.92) calls attention to the process of assimilation by Russian elements. Educational measures, including ~~the~~ adoption of the Cyrillic alphabet (1940) are effective in the direction of this tendency. According to Thiel (No. 37, p.104) the percentage of Buryats in the republic named after them amounted in 1941 to no more than 43.8%. The total number of Mongols in the Soviet Union hardly ~~exceeds~~ reaches 400,000, and in China the total barely reaches about 1.5 million.

The increasing amount of influence exerted by the Buryats upon the other Mongolian groups, especially the Khalka Mongols, is described by Lattimore (No.90). The Buryats, who possess the highest degree of education in the modern sense of the term, work in the Mongolian People's Republic as technicians, and as economic or educational advisers, thus influencing ~~the~~ in various matters the other Mongols who live there. The East-Mongolian Khalka dialect, which was formerly the most important dialect of the Mongolian language, is in this manner subjected noticeably to the influence of the North-Mongolian dialect of the Buryats. In the travel reports of Christensen (No.30), Bosshard (No.68), and Monetell (No.95) -- the last two for many

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books contain exceptionally fine pictorial illustrations -- containing valuable information concerning some of the groups living in Inner-Mongolia. Bosshard had the benefit of advice from F.A.Larson, the famous "Duke of Mongolia" and others. He became acquainted, above all, with several of the Chahar "banners," with the West-Sunid "banner" of the Silingol League, and with the Durbed "banner" of the Ulankhab League. Montell had visited, among others, the Torguds of the Edsin-gol region, who live pretty much in isolation from the other Mongols and have thus preserved numerous distinguishing characteristics, although in most recent times they have been crowded, more and more, by Chinese colonists advancing rapidly into this region.

Relations between the Mongolian herdsmen population and the Chinese agricultural peasants, who to some extent arrived on the scene quite early, but chiefly immigrated during the second half of the past century into the Mongolian pasture regions, can be found described in the writings of Fochler-Hauke (No.15a,

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p. 268 ff. and 113 ff.), who cites as example Jehol, West-Manchuria, and the Barga. Cressey, Lattimore, and others had dealt with this problem of Inner Mongolia before him. Chinese colonization is directed precisely toward the best of the pasture lands of the Mongols. In many instances the Chinese officials simply have been assigning desirable Mongolian lands to the Chinese colonists; but even the Mongolian nobility themselves have in many instances from selfish motives delivered land into the hands of the Chinese, through sales or leases. Moreover, the various attempts made by some of the Mongolian ethnic elements to hold on to their lands by changing from the pastural to an agricultural economy have not always been successful. Frequently the Mongolian peasant had to give up the struggle because of the superior skill of the Chinese peasant in matters of peasant-farm operation and because of indebtedness to Chinese traders. For the average Mongolian tilling of the soil is not a goal worth striving for: and the decision to settle down on the land is in most instances not made with a view to advancing into a higher form of culture and economy, but merely because no other means seem available to ward off Chinese penetration of the land. During the Japanese Occupation measures to protect the Mongolians were taken in Manchuria and in some parts of Inner Mongolia. It is not possible at this time to determine the extent to which any such measures continue in force under the Chinese Republic of Inner Mongolia. In Outer Mongolia it was not found possible for

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the Chinese to gain a foothold as peasant colonists, since during the last few decades the country was closed to them for political reasons.

At present most of the Mongolians follow the Lamaistic form of the Buddhist religion; and it is only among the Buryats that orthodox Christianity has to some extent been accepted. Buddhism found its way into Mongolia as early as the middle of the 13th century; but since the collapse of the Mongolian empire it has lost its importance in those regions. Reconversion was to the Lamaistic form through the "reformed" Yellow Church. The former Urga (Ulan-Bator) was given at that time a special Mongolian head of the Church, a Living Buddha (Khutuktu). Relations with Tibet were at all times very close. Glasenapp (No.78) has shown, however, that at the present moment Lamaism in Mongolia is in every respect in a period of decline. In Inner Mongolia it had recently achieved once more a certain apogee, since the Panchen-Lama had taken his exile there. Since the time of incorporation in the Chinese People's Republic, however, Lamaism has once entered into a period of decline -- having occasionally produced a hindering effect upon the country's general development, as result of excesses of monastery life. In Outer Mongolia, since the

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First World War, the Khutuktu had been intervening also in political matters, in behalf of the country's independence. Since his death (1924) he was for political, anti-Lamaistic reasons, "reborn" no longer in Mongolia, but in Tibet; and since 1929 a beginning was made with confiscation of monastery properties as well as those of the nobility.

Glasenapp emphasizes that after the turn of the century Czarism was making an effort to win political influence in Tibet by way of the Lamaism of Buryat-Mongolian and other Buddhistic citizens. In more recent times, in the Soviet Union, Lamaism was called upon to join the issue with dialectic materialism. According to Lattimore (Pacific Affairs 1937, p. 472) the Lamaist Church in Mongolia has revealed and retained greater vitality, however, than the Mongolian nobility.

An intelligent appreciation of Mongolian history calls for acquaintance with the Mongolion concepts of law and their relation to the Lamaist Church and to the country's social organization. Important contributions on this subject are furnished by a collection of source material brought out by Ryazanovskiy (No.96), and by Lattimore's critical analysis of this collection (Pacific Affairs 1937, p.

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477 ff.). Ryazanovskiy bses his conclusions above all on:the fragments of Ghengis Khan's Code of Law; the West-Mongolian Code of 1640; the Khalka codes of the 18th century; Buryat traditions concerning the history of Mongolian law; and legal forms in Outer Mongolia prior to 1924. The author ddiscusses the (development and) historical influence of Chinese and Russian legal concepts. Lamaism, especially during the 18th century, exerted a strong influence upon development of the law; and likewise of great importance were the consequences resulting from the foundation, on nomad territory, of monasteries in permanent locations; and the assignment,to these monasteries, of large groups of individuals as monks, who, in this manner, were removed from the jurisdiction of tribal law. The nobility tried to preserve its influence by placing members of the nobility in important positions of the church hierarchy; while the Manchus interfered with any (-- to them --) dangerous trend toward tribal centralization, or centralization of territories or church power. Their purposes were served also by the "Banner"-type of social organization. They issued orders, moreover, to prevent filling the higher church positions with close relatives of Mongolian tribal princes.

Although many questions are still left unanswered, the more recent studies have contributed importantly toward making it possible to form at least an adequate general idea of the political, social, and clerical organization of the Mongolians throughout the course of their history.

5. ECONOMY, SETTLEMENT, AND COMMUNICATIONS

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108. Heissig, W.: Das Gelbe Vorfeld; die Mobilisierung der chinesischen Aussenländer (The Yellow Forefield; Mobilization of the Outlying Chinese territories). Heidelberg 1941. 162 pp. Maps. Pictures.

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The natural prerequisites of the economic development were briefly set forth by W. Haude in an earlier publication (cf. Hyllningsskrift tillägnad Sven Hedin: published in honor of Sven Hedin's 70th Birthday, by the Swedish Anthropological and Geographic Society, Stockholm 1935). In the northern marginal regions of Outer Mongolia there prevails -- except at the highest elevations, where the climate

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and vegetation have tundra characteristics -- a side-by-side of boreal agricultural-steppe and steppe climate, which condition is followed farther south by a belt of pastural-steppe climate (like that which is characteristic also for the eastern marginal areas), and at individual points this zone contains areas that have

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a desert-steppe or a steppe climate. In West-Mongolia and in Dzungaria one occasionally encounters an oasis with agricultural-steppe climate; and similar conditions prevail also south of the Gobi, as for instance in large portions of the so-called Inner Mongolia.

The economic life of the Mongolians is to this day based almost entirely upon stock-raising, largely in the nomadic manner. The number of agricultural Mongolians continues to be small; and these agricultural groups, especially, are -- in Inner Mongolia -- exposed to the danger of absorption by the Chinese. The raising of sheep and bovine cattle predominates, the sheep being first in importance as a source of meat, milk, and wool. The horse is the most important of the animals used for riding; but the camel is to some extent used as the beast of burden in a numer of local areas.

The development of Inner Mongolia has in recent times passed through a number of different phases (cf. No. 113 and No. 15 a). The Chinese agriculturists and tradesmen who have since the last century pushed forward into the southern and eastern marginal areas of Mongolia are now in possession of a large part of the choicest lands in those regions; and as result of political events during the last two decades, particularly the great floods of the thirties along the lower Hwang-Ho, additional tens of thousands of Chinese have come in, flooding over the marginal territories of Inner Mongolia. When the Japanese occupied Inner Mongolia, the Mongolian economy was in a low state of decline: partly due to the loss of lands to Chinese peasants, and partly as result of indebtedness to the Chinese traders. To be sure, the Japanese protected the Mongolians from further losses of land to the Chinese; they also started a certain reform of the archaic Mongolian economic procedures; and they reorganized commerce and created model trade stations to improve the deliveries of wool and meats. At the same time, however, they were interested primarily in their own advantages -- especially in the matter of trading by middle-men -- and the Mongolians felt disappointed, although they might, because of their dislike

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for the collectivization measures adopted in Outer Mongolia they might have been favorably inclined to cooperate with the Japanese.

It was not possible to change the basic factors of the situation; and the Chinese peasants continued in possession of a belt zone, which has in the Chahar a width of more than 100 km., of what were at one time the best of the Mongolian pasture lands. So far as the Chahar is concerned, certain possibilities of development continue to exist only in the northern part, in the territory of the Silingol-Liga, which at present forms part of the Autonomous Republic of Inner Mongolia. In Ninghsia the oases are settled almost entirely by the Chinese, and the Torguds, Alashan Mongols, etc. have only few opportunities left to strengthen their economic power. In Suiyan the loess areas in the east and the oases along the Hwang-Ho have

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in part been colonized by the Chinese since the ancient days, but chiefly since the advent of the "Peking-Suiyuan Railroad." The Ordos Mongols, the Durbeds, etc. are among those Mongols who were economically more retarded than any of the others. Among the economically most important regions of Inner Mongolia can be mentioned the former Chingan Provinces of Manchuria, where great successes have been achieved 1932-1945 in the raising of sheep (crossing of Mongolian sheep with merinos, obtaining in this manner not only a better quality of wool, but also two and three times the former yield of wool). Within the area of the former Chingan provinces one could probably count 1.4 million sheep, 600,000 head of bovine cattle, several hundred thousand each of horses and goats, and about 12,000 camels. The exploitation (started by the Japanese and now continued by Peking) of hard coal and soft coal deposits, of the fairly extensive iron ore deposits, and of the presumably not very large oil reserves benefits first of all the Chinese elements of the population and will in the long run have the effect of weakening still further the position of the Mongols.

The currency reform carried into effect by the Japanese during the occupation period (No. 103) had resulted in a measure of financial stability which, though merely contingent, exceeded all expectations, but was followed, after 1945, by another period of great uncertainty. The "three-year plans" undertaken by the Japanese called, in their first Section, for the production, among other things, of 500,000 t. of wool within the Mongol Federation. Similarly the present Government of the Autonomous Republic of Inner Mongolia has prepared economic plans of its own.

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In 1950, for instance, 40,000 hectares of land were newly assigned, so that at that time the area of cultivated land (mostly settled by Chinese) comprised a total of 940,000 hectares.

Moreover, 200 million trees were to be planted by 1950, so as to improve local climatic and edaphic conditions and to place the forest economy on a rational basis. With a view to better exploitation of the forest of the southwestern parts of the Great Chingan present plans call for the construction of nearly 300 km. of railroad. The social and political organization of the Mongols in "banners" has not been interfered with so far; and in order to protect both, the Mongols and the Chinese, from exploitation by Chinese traders, a beginning was made, during the last few years, with the establishment of associations, whose membership was in 1950 reported to be 500,000 in Inner Mongolia. There has been a considerable increase of motor traffic, serving in part to haul freight and passengers for railroad stations in the marginal territories; and a railroad line completed in 1954 handles traffic from Peking through the Gobi to Ulan-Bator (Outer Mongolia), as well as from Kalgan to Tolun and also to Jehol. The traditional caravan traffic still predomi-

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nates in the interior areas. There is an airline from Peking via Kalgan and Ulan-Bator to Irkutsk, and another from Harbin via the Barga to Chita in the Soviet Union. The dwelling of the Mongol still consists predominantly of the Yurta, i.e. of a quickly built and quickly dismounted dwelling that consists of a wooden framework covered with felt. The settled Mongols have adopted the type of house used by the colonists of North-China, though in some localities they have developed curious intermediate types between this type of house and the yurta. The larger cities offer the appearance of typical North-Chinese colonial cities and harbor only small Mongol minorities, e.g. Hailar (Hulun, 40,000 inhabitants), Ulanhot (Wangychmiao, 30,000 inhabitants), Tolun (50,000 inhabitants), Kalgan (Changkiakow, Wanchuan, 150,000 inhabitants), Kukukhoto (Wkeisui, Suiyuan, 200,000 inhabitants), Ninghsia (?5,000 inhabitants), etc. A local industrial center is in course of development at Pautu (Paotow).

In the Autonomous Buryat-Mongolian Soviet Republic (cf. No. 37, pp. 125 ff.,117) the economic structure has during the last few years undergone more profound changes

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than in any other of the Mongolian territories. Most of the Buryats have by this time become sedentary or semi-sedentary and are, like the Russian part of the population, devoting themselves to agriculture (rye, wheat, oats), although in some of these areas the crops are endangered by dry weather and by night frosts. Animal husbandry (beef cattle, sheep, horses, goats, camels) has made great progress in these areas, as result of crossing of breeds, improved feeding, establishment of model stations, and so forth. Quickly developing exploitation of the underground wealth (coal, iron, bauxite, graphite, etc.) has helped to promote an influx of non-Buryat elements (Russians), although the Buryats themselves have likewise in an increasing measure found employment in mining and in the industries. The capital city of Ulan-Ude (formerly Verkhne Udinsk, nearly 150,000 inhabitants) has a predominantly non-Buryat population and is an important industrial and traffic center. There is a side branch leading from the old Trans-Siberian Railroad to Ulan-Bator in Outer Mongolia.

Considerable changes have supervened also in the economy of the Mongolian People's Republic (No. 25, pp. 48 ff., 111-13, 118). The raising of beef cattle predominates in the northern and northwestern territories; and there, as well as in the eastern part of the country, the raising of sheep is likewise pursued. Camels are being used chiefly in the interior marginal regions. In recent decades, and usually under the direction of Russian and Buryat-Mongolian advisers, a large number of measures was adopted to introduce improved methods of cattle-raising, to improve breeds, and to ensure better utilization of the products. Thus a large number of new watering places were provided (ponds, wells) and recommendations were offered for conducting the grazing and care of pastures in accordance with modern

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methods; and the introduction of grass-mowing machines and winter-feeding in stables furnished an entirely new approach to the taks of getting away from the primitive nomadic methods of stock-raising.

During the latter part of the twenties the innovations, especially the collectivization experiments, had been initiated with so much precipitation that in 1930 serious resistance manifested itself among the population (cf., among others, No. 108); and during the years that followed some of the herdsmen's families and their herds moved away into certain parts of Inner Mongolia. In recognition of the hazards incident to hasty socialization measures a moderate policy was initiated in 1932; and

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even the newly created state farms in the North had to shift their principal effort once more from grain cultivation to stock-raising, because it had been recognized that under the existing conditions the really vital requirements of the Republic could be met only by a pastural foundation. The Government created a special "Veterinary and Zootechnical" Administration (and at Ulan Bator a school for veterinary's assistants was created); and so far as possible veterinaries were established in the country districts. In 1921 the number of heads of cattle per person was only 18; but in 1941 the number had risen to about 30 per capita of the population (15.9 million sheep, 2.8 million beef cattle, 2.6 million horses, 5.5. million goats, about 700,000 camels and a like number of yaks). In the Aimak-Dund-Gobi the number of cattle per inhabitant is 50. In former times hundreds of thousands of (pastured) animals perished each year as result of plagues, shortage of feed, smooth iced surfaces, and so forth. These enemies of the stock-farmer are now being fought by the erection of shelters, preparation of hay, and other measures. As early as 1950 there had be established no less than 55 mowing-machine stations (grass-mowers). That same year 1 million t. of hay were brought in, as compared with barely 10,000 t. in 1939. A five-year plan (1948-52) was adopted in 1947, and called, among other things, for: expansion of irrigated areas; development of industries; and advances in mechanization of the means of transportation (cf. No. 115). It was intended that upon completion of the five-year plan the total number of heads of cattle should reach 32 million. The area of cultivated land (1950: 45,000 hectares) was likewise to be increased considerably. The state farms cover at this time approximately 12,000 hectares. The area potentially amenable to irrigation farming has recently been estimated at 3 million hectares. The agricultural areas are located chiefly in the Selenga-Valley, along the Orkhon River and along the Chara, a region populated chiefly with Chinese prior to the Revolution. Ulan-Bator has now a large meat "kombinat," as well as a number of minor plants for the processing of wool, a soap factory, a brewery, and a small paper mill on the banks of the Iro River. The capital city now also has in operation, a small electric plant, printing shops, leather-processing establishments, and automobile repair shops. Similarly the larger cities of the interior of the country have established wool-washing plants and small mechanical shops. The unit of currency, since 1925, has been the Tukhrik (approximately equivalent to the ruble of the Soviet

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Union) = 100 Mongo. The Government's budget for 1951 anticipated expenditures in the amount of 351.4 million and an income of 346.4 million tukhrik. Stabilization of the currency made it possible import mining materiel and vehicles from the Soviet Union; and these imports, in turn, favored the exploitation of hard-coal and soft-coal deposits (Nalaicha, Bain Bulak, Under Chan, Yugodsir, and Dsun-Bulak), of deposits of graphite and rock salt (in the vicinity of the Chubsu-gul, near the northern border), and of a number of smaller deposits of gold, silver, magnetic iron rock, and chromium (in the Mongolian Altai, etc.).

Road-construction was speeded up. A number of former caravan trails can now be traveled by automobiles. The highway Ulan-Ude -- Altan Bulak -- Ulan-Bator partakes at present of the characteristics of a main artery of traffic. In the Northwest, the Soviet Union is connected with the People's Republic by way of the Chuya Highway of the Altai. As was mentioned earlier, the Ulan-Bator -- Tsining section of the Peking --Suiyuan Railroad was completed in 1954. Since 1939 the railroad lines Ulan-Ude -- Ulan-Bator and Ulan-Bator -- Nalaicha have also been completed. Still another railroad connects Cojbalsan (the former Kerulen or Bajan Tumen) with Borsja on the Trans-Sibirian Railroad. The capital city is also connected by an airline with the Chinese net of airlines and that of the Soviet Union. A limited amount of river traffic is maintained on the Orkhon and the Selenga. Ulan-Bator has a wireless telegraphy station, and is connected by a telegraph line with Ulan-Ude. Both, domestic and foreign commerce are almost entirely in the hands of the Government. Prior to the First World War the foreign commerce moved primarily via China; but later the Chinese traders were expelled. Exports and imports are now under the control of the "Sovmontor" (a state-owned commercial association), and the Soviet Union is almost exclusively the party of the second part in the transactions. The exports consist chiefly of horses, wool, leather, undressed skins, and mining products; the imports include food products (flour), vehicles, machinery, and other industrial goods. The capital city, Ulan-Bator, has approximately 100,000 inhabitants. It has greatly changed its appearance in consequence of the construction of factories, schools, and administrative buildings. In the other larger cities, such as Altan-Bulak (Maimatshen, 10,000 inhabitants), Dzhimgalantu (Kobdo, 10,000 inhabitants), and Dzhibkhalantu (Uljassutai, 10,000 inhabitants) a number of outside

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and foreign structural conceptions. The most recent of the "cities" is Sukhe-Bator, at the terminal point of the Selenga river shipping, and the second largest of them is Cojbalsan (San-bejce, Bajan-Tumen).

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The accounts of travel, historical accounts, etc. listed in this Section (No. 120, 127, 133, 137, 153), as well as those mentioned in another context (No. 68, 69, 95) contain observations concerning the land and its people, such as are of value also for the geographer.

Quite a considerable number of publications concern themselves with the political events that transpired during the most recent decades in the different sections of Mongolia. To some extent they throw light on the Soviet, Japanese, and Chinese points of view; and to some extent, as for instance the studies by Lattimore, Heissig, and Friters, they seek to interpret from an objective point of view the conditions and the factors by which they were determined.

After the disintegration of the Mongolian world empire the Mongolian regions lost their importance, were for a long time left practically to themselves, and finally developed more and more into a bone of contention for the neighboring great Powers. To a large extent the great awakening of the Mongols was connected with the eastern penetration of Russians during the 16th and 17the centuries. The Mongols, who for centuries had lorded it over large parts of Russia now fell themselves under Russian dominion (cf. No. 156). The Buryat Mongols, who in 1648 were still able to beat back the cossacks, and whose tribes had under the leadership of the "Noyons" ("Nojone") an almost state-like organization, finally became subjects of the empire of the Czar, and the border town of Kyakhta acquired great importance for trade between Russia and China. With the close of the 19th century Russification measures became intensified; and after the turn of the century a beginning was made with determ-

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ined efforts to interlard the Buryat settlement territories with Russian settlers, by confiscating any landed property in excess of 16 desyatins, and distributing these lands checker-board fashion among Russian colonists. During the revolutionary year of 1905 the Buryats drove out some of the foreign chiefs of the communities, and the

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traditional steppe meetings were to some extent resumed. When the Revolution had been suppressed, an even more forceful Russification policy was adopted.

As result of the Revolution of 1917 the Buryats, likewise, became restive again. They formed associations that brought about a union of the western with the eastern Buryats and included also the aimaks of the region of Guchitsk. The territory was organized in the form of aimaks (districts), whose dissolution was unsuccessfully attempted by the Kolchak Government. Part of the Buryats fought with the Red Army not only against the Kolchak troops, but also against the regime of Baron Ungern-Sternberg, which was removed from power in Outer Mongolia. Establishment of the Soviet Government resulted in the West (Sibirian Oblast') in the establishment of an Autonomous Buryat-Mongolian Territory; and in Trans-Baikalia, likewise, an autonomous Buryat territoy was created within the then existing Republic of the Far East. When conditions had become stabilized, the Autonomous Buryat-Mongolian Socialist Soviet Republic was established, on 1 August 1923, within the Federated Russian Socialist Soviet Republic, covering an area of 331,400 sq.km. with 542,170 inhabitants in 1939 (in 1954 presumably ab. 620,000; density of population per sq.km. about 2; Capital Ulan-Ude, with appr. 150,000 inhabitants). To be sure, even at that time the Buryat-Mongols were in the minority as compared with the Russians; but in consequence of the most recent, very energetic measures to speed up industrialization the relative proportion of Buryats is decreasing still farther, even though they form a highly progressive element of the population -- at present they have hardly any analphabets left among them and although, as previously mentioned, they exert an increasing measure of influence also upon the neighboring Khalka-Mongols (cf. No. 37, 141, 143, 149). The Buryat Republic is one of the most important areas of the Soviet Union as regards production of excess cattle.

The political status of the former Uryankhai (cf. No. 128,129,92,p. 20) was rather indeterminate for quite a long time, this territory being regarded as belonging under Chinese sovereignty, since the Czarist Government of Russia had

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in 1864 renounced rights of possession that were presumed to have existed since 1727. It is true that in 1912 the Czarist Empire had proclaimed a sort of protectorate over this source area of the Yenisei River, but due to the World War and the Revolution this protectorate had failed to become effective. Generally speaking Uryankhai had been regarded as a sort of outpost of the Chinese-controlled; and the inhabitants, the Tuvindians, who do not exhibit any close kinship with the Mongolians, are regarded as Turkofied Samoyedes and were organized as such in five "banner" during the Manchu

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rule. Outer Mongolia had always been sending an official to Tuva who bore the Manchu title of "Amban" and was, in turn, subordinate to the "banner" general in command in Ulyassutai. While the Czarist Government had as late as 1916 referred to its rights in the protectorate, the Soviet Government acknowledged in 1921 the independence of that territory, and the latter was converted into a Free-State under the name of Tannu-Tuva (Tangno Toba). In 1925 a Soviet-Outer-Mongolian commission settled the questions still left open, and in 1926 the Mongolian People's Republic and Tannu-Tuva signed a treaty that provided for mutual exchange of diplomatic representatives. In 1941 Tannu-Tuva began to take part in the war on the side of the Soviet Union; and on 11 October 1944 the Free-State as received, as an autonomous territory (Tuvinskaya Autonomnaya Oblst') as a member of the Russian Socialist Federative Soviet Republic of the Soviet Union. The territory in question comprises an area of 166,000 sq.km. and about 70,000 inhabitants, only about half of whom are Tuvinians living as stock-breeders and hunters; and the administrative center is at Kyzyl (Krasny, 10,000 inhabitants).

The Chinese Revolution of 1911 created an entirely new intellectual and political situation for the leading groups of Mongolian territories under Chinese dominion. These groups had been acknowledging the overlordship of the Manchu Dynasty that was ruling China, but felt no sort of obligation toward the new Chinese Republic (cf. No. 128). In 1911 the Mongolians of Outer Mongolia addressed to St.Petersburg a request for support against the Chinese claims; and in 1912 there was signed at Urga (the present Ulan-Bator) a treaty between the Russian Empire and Outer Mongolia which to all intents and purposes recognized the latter as an autonomous commonwealth. During the same year Russia and Japan came to an agreement concerning their respective spheres of interest in Inner Mongolia. To Russia were assigned the

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territories west of the meridian of Peking, and to Japan those lying east of that meridian (cf. also No. 147 and No. 149). During the First World War China made an effort again to strengthen her dominion over Outer Mongolia, seeing that Russia was not in a position to intervene. In 1919 -- with the tacit consent of the Japanese Government, which did not welcome the advance of the Russian Army in Sibiria -- Chinese armed forces under General Hsü-Shu-tseng were sent to Out Mongolia, where they established a rule of tyranny, among other things imprisoning the "Living Buddha" (Dzebtsundamba Khutuktu) of Urga as a hostage. The confused situation then enabled Ungern-Sternberg to invade Outer Mongolia and to keep in touch with the Ataman

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Semyonov, who enjoyed Japanese support. Ungern-Sternberg occupied Urga, on 4 February 1921, drove out the Chinese troops, and installed a Government formed by Mongolian princes and by the "Living Buddha." Meanwhile revolutionary Mongolian elements had been holding, 1919 in Sibiria, a pan-Mongolian congress, and guerilla warfare against Ungern-Sternberg were organized, with the support of the Soviet Republic of the Far East, by the later Mongolian Marshal Čojbalsan and the Mongolian national hero Sukebator, who is considered to have been the real liberator of Mongolia. On 1 March 1921 these groups founded at Kyakhta the Mongolian Revolutionary People's Party, and on 13 March they formed a Provisional Government of Outer Mongolia, requesting aid from the Soviet Government. On 6 July 1921 the guerilla warriors, supported by the Red Army, conquered Urga, and this city was declared to be the seat of government of the Mongolian People's Republic (cf. No. 136, p. 228). The "History of the Mongolian National Revolution" brought out by Čojbalsan is at present being rendered into English at John Hopkins University, Baltimore).

In November 1921 a first treaty was concluded between the Soviet Union and the Mongolian People's Republic (Bughut Nairamdakh Mongol Arat Olos) (cf. No. 129) in which the two parties mutually acknowledged equal rights. The new Government was only able to get control gradually, and was at times compelled to get support from the nobility and the lamaists against whom the revolutionary movement had been directed. Difficulties arose also between the Government and the Revolutionary People's Party. Bodo, the President of the Council of Ministers was shot in 1922, and in 1924 also Danzan, the Commander in Chief of the newly created Mongolian Army, both having been accused of secret understandings with China. After the death of

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of the "Living Buddha" (Bogdo Gegen Khan), who had been regarded as the nominal head of the Government, a stricter revolutionary policy was adopted. Despite the existing friendly relations with Outer Mongolia the Soviet Government acknowledged the latter -- in a treaty concluded with China in 1924 -- to be an integral part of the Chinese Republic. In 1925 the Soviet troops were withdrawn from Outer Mongolia. During the time from 1921 to 1925 the nobility and the Lamaist Church continued to offer resistance; but between 1925 and 1928 the Revolutionary People's Party was able to strengthen its position, and during the time from 1929 to 1932 the former ruling classes lost their influence entirely. It is true that a long-continued resistance developed against socialization measures, a resistance supported by the broad masses of herdsmen. 1935-37, under Čojbalsan, all forces taken to be anti-revolutionary were expelled from the Party and from the State, and strong measures were taken es-

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pecially against the Lamaist monks; but finally the Revolutionary People's Party was triumphant. A decree amending the Constitution declared, 28 September 1944, that Lamaist monks, exploiters of the people, slave holders, and so forth, no longer possessed "any organized power of resistance against the revolutionary trend and no longer were any menace to its existence (cf. No. 136, p. 229).

In 1935 there occurred along the Khalka, in the border area on the Manchurian frontier, some first skirmishes with Manchuria-Japanese troops which, despite the efforts of mixed frontier commissions, continued until the year 1939. It was presumably a result of the continued presence of the Japanese in Manchuria when on 2 April 1936 the Soviet Union and the Mongolian People's Republic concluded a mutual assistance treaty that confirmed and broadened an earlier agreement concluded in 1934. On April 7th China protested against the mutual-assistance treaty as being in violation of the Chinese-Soviet agreement of 1924; but the Soviet Union turned down this protest, on April 8th, stating that the new agreement was not directed against the interests of any third parties (cf. No. 108, p. 103). Meanwhile a system of universal compulsory military service was built up in Mongolia, and the country's armed forces were subjected to a thorough-going process of modernization, so that a force of 80,000 men was ready in August 1945 and intervend, at the head of the troops of the Soviet Union, against Japanese troops in Manchuria and Inner Mongolia.

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In a treaty concluded on 14 August 1945 between China and the Soviet Union China declared her readiness to acknowledge the independence of Outer Mongolia, provided the population voted as a popular majority in favor of independence. The plebiscite was held on 20 October 1945 and resulted in an almost unanimous decision in favor of independence. On 5 January 1946 China acknowledged in the independence of the Mongolian People's Republic. A treat concluded on 14 February 1950 between the Soviet Government and the Chinese People's Republic of Peking similarly guaranteed the Independence of the Mongolian People's Republic. On 27 February 1946 the latter signed with the Soviet Union at Moscow another friendship and assistance treaty. On 4 October 1952 followed the signature, at Peking, of an economic and cultural treaty between the Chinese People's Republic and the Mongolian People's Republic (cf. No. 115, p. 1219).

Friters (No. 128) and Hazard (No.132) reproduce, with comment, the text of the Constitution of the Mongolian People's Republic as adopted in 1940. In working out their Constitution the Mongols, who are still predominantly nomadic, were able, to some extent, to build on experience with the revolutionary constitutions of the 1920 Soviet Republic of Khwarazm, since the latter had to deal with analogous

Page 231: economic problems, such as the application of Marxist theories to a population with predominantly nomadic economy. As to the rest, the Mongolians, although their own Constitution bears the date of 1940, relied largely upon the older Constitution of the Soviet Union instead of the more recent Constitution of 1936. The real power of the State resides in the "Great People's Council" (the Great Khural, where "Khural" has has approximately the meaning of "soviet," i.e. a general council formed by a general election in which all men and women over the age of 18 have a vote); and this Council has exclusive power to modify the Constitution. It also elects the "Small People's Council" (Small Khural), which consists of 30 members, and exercises the powers of government and is responsible to the Great Khural. Strictly speaking, the executive powers are exercised by asmall "Praesidium" consisting of seven members who are chosen the the Small Khural. The following are excluded from the right to vote: the Khubilgans, the Khutuktu, the Dyazak, and the Nadzazak, i.e. members of the former ruling classes of the population. The Republic is subdivided in 18 provinces (aymak) and 322 districts (somon). Its area of appr. 1531000 sq.km. supports a population of

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ab. 900,000 inhabitants, more than 90% of whom are Mongols. In 1951 the country had 374 elementary, 32 intermediate, and 15 advanced-level schools, attended by about 69,000 pupils and students, as well as 15 technical high schools and 3 high school institutes attended by a total of 3,500 students. In 1946 the old Mongolian alphabet was replaced by a new alphabet based on the Cyrillic script. The number of analphabetes among the total population is at present estimated to be about ~~in~~ 13% (No. 25, p.65).

There existed unquestionably in at least part of the Mongolian population a desire to exploit the successful march into Inner Mongolia in 1945 for the purpose of ~~winning~~ bringing all Mongols under one and the same Government; but this idea had to be given up at the same, due to the fact that the Chinese People's Republic refused to renounce to these territories. A request made by the Mongolian People's Republic for membership in the United Nations was declined in September 1946, due to the opposition of Great Britain, the United States, and others.

The political fate of the Manchurian and the Barga Mongols during the last few decades was similarly eventful. In 1911 and 1915 the Barga witnessed uprisings of the Mongols against the Chinese administration. China felt prompted to grant a certain measure of autonomy to the Barga Mongols; but there followed practically no change with respect to Chinese infiltration (cf. No. 108, p. 81 ff.); and the limited amount of self-administration that had been granted was rescinded again by a Chinese Presidential Decree in 1928. During the summer of 1928, under the lea-

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dership Mersai, there wer renewed Mongol uprisings against the Chinese dominion, an action that had the support, especially, of the "Young Mongol" movement founded in North Jehol and the Barga as far back as 1922, and was led by politicians some of whom had pursued their studies in Moscow, Vladivostok, and so forth. The Japanese, likewise, began at that time to esert an influence upon the Mongols. The conferences of Mongol princes called together by the Chinese Central Government in 1930 at Mukden and Nangking did not produce any results favorable to the Mongol strivings for autonomy. When the Japanese advanced into Manchuria in 1931 they met with no resistance from the Mongols residing there. During the time that followed, Japanese policy depended primarily upon support from the nobility and the monasteries. In 1932 consultations were held by representatives of Japan, i.e. of the Manchurian Government

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instituted by them, and representatives of the Barga Mongols, as well as those of the Jerim, Cho-ota, and Khossoto associations. These discussions led to the formation of an autonomous Chingan-Province comprising four districts, which was administered under the Ministry of Mongol Affairs (known since 1937 as the "Chingan-Bureau"), a Japanese-Mongolian authority. An attempt was made also to revive former bonds between the Mongols and the Manchu Dynasty -- consequent upon the coronoation of Puyi (Mongolian: Emperor Engke) as Emperor of Manchuria. The monasteries were reorganized, Mongolian schools were established, and Mongolian troops were trained. In 1939 the provinces of North Chingan, South Chingan, East Chingan, and West Chingan covered together an area of 425480 sq.km., with a population of about 1.8 million among whom were included, however, not more than about 480,000 Mongols. The latter, consequently, were faced with a Chinese majority, but enjoyed a completely autonomous administration. Due to the fact that the Mongols in Manchuria do not show much of a tendency to form closely united settlements, not more than barely one-half of the Mongols living in those regions were included under the autonomous Province of Chingan (cf. No. 15a, p. 355 ff.). After the Japanese collpase certain sections of the Mongol population in Ulanhot (Wangyehmiao) proclaimed in western Manchuria an Inner-Mongolian People's Republic which, however, did not continue in existence very long.

Sun Yet-Sen, the "father" of the Chinese Revolution of 1911 had proclaimed the equality of the people's of China, but at the same time had also demanded the transfer of great masses of the Chinese population from the overpopulated provinces to the thinly settled marginal areas. Among others, these areas included the territories of Inner Mongolia, where soon thereafter large numbers of Chinese farmers and traders moved in, as was mentioned in the foregoing. Japan employed

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agents in an effort to exploit in her own behalf the discontent of the Mongols; and at the same time China went about destroying such remnants of Mongol autonomy as had still survived from the Manchu times. The Chinese wroked to disrupte not only the tribes themselves, but also the Manchurian league system -- a system under which the Manchurian tribes had been broken up and reorganized in "banner" groups, so as the prevent the complete unity of any tribe as a whole (cf. No. 156, p. 16 ff.). But

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it was not until 1928 that the Chinese Government began to do away with the notion of an "Inner Mongolia," by reorganizing these territories as provinces; and the Mongolian pasture lands there then distributed among the provinces of Jehol, Ningsia, Suiyuan, and Chahar (cf. No. 125, pp. 116 ff., 342 ff., 461 ff., 231 ff.). Chinese efforts to penetrate the Mongolian pasture lands were made easier by the lack of unity among the Mongols themselves; but there developed among the younger Mongols, to some extent under the influence of study in foreign countries, certain nationalistic currents calling for autonomy. In 1930 the Chinese Government called together, at Nanking, a conference with Mongolian leaders, and the Mongols were promised certain special forms of assistance in matters of economic and cultural reconstruction; but they never really received any assistance and were never granted any real measure of autonomy.

During the years that followed, an increasing measure of propaganda effect was exercised, upon the Mongols left in China, by the Japanese autonomy-measures in the Province of Chingan and by events in Outer Mongolia. An increasingly important role was played, among the Mongols in China, by Teh-Wang, the Prince of the West-SunnitBanner of the Silingol-League (located in the northern part of what was then the Province of Chahar, and the only territory that had been touched very little by Chinese colonization). He created an army of Mongol horsemen and attempted a reorganization of the monasteries, in order to keep a majority of the young men from going into the monasteries (cf. also No. 108, p. 118 ff.). When the Japanese occupied Tolun, one of the border towns of Chahar, and the local Mongols joined them, Teh-Wang called in 1933 a conference of Mongolian princes at Baturkhalak (Peilingmiao in southern Suiyuan), for the purpose of demanding autonomy from the Chinese. The latter thereupon appointed a Government Commissar for Inner Mongolia, but made at the same time an attempt to weaken the Mongolian demands, making use for this purpose of the Panchen-Lama, one of the two highest dignitaries of the Lamaist Church hierarchy. It was not until 3 March 1934 that the Chinese were willing to grant autonomy -- when the effects of Japanese influence exercised upon the Mongolians from Manchuria had become dangerous to China.

In April 1934 a local Autonomous Political Council for Inner Mongolia was formed at Baturkhalak, with Teh-Wang as its first presiding officer. However, this Council

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had only limited possibilities of functioning; and Teh Wang soon found his efforts toward genuine autonomy restricted due to the defection of the Ordos Mongols and part of the Ninghsia Mongols (who succumbed to Chinese promises), and due to the increasing amount of collaboration between the Jehol Mongols under Li-Shou-Hsin and part of the Chahar Mongols with the Japanese. In January 1936 the Chinese Government created for the Suiyuan Mongols a "Mongolian Political Council" which functioned exclusively under Nanking, with the result that Teh-Wang's influence was restricted still further (cf. also No. 121). Teh-Wang thereupon joined forces with Li-Shou-Hsin, moving the seat of his own Government to Chapsar, in the East, where he started upon closer cooperation with the Japanese, without, however, losing sight of his ultimate goal. In 1937 his Mongolian troops, jointly with Japanese units, conquered all of Chahar and Suiyuan, forcing the Chinese back to the South. On 28 October 1937, at Kukukhoto (Suiyuan, or Kweisui) a meeting of 500 representatives of the tribes of Inner Mongolia decided upon the formation of an "Autonomous Government of the Mongol Leagues." The Ordos Mongols and the Ninghsia Mongols, remaining with China, were not represented at this meeting. A short time later Teh-Wang became the President of the new Government.

But prompted by economic and general political considerations the Japanese caused in November 1937 formation of a union that comprised the Chinese-settled part of South-Chahar and North-Chansi along with the Mongolian areas, although Teh-Wang's influence remained to some extent intact even after the reoganization of 1939. The newly founded ("Mengchiang Federation" (Men-Chiang = approximately, "Mongolian frontier territory")comprised an area of 466,000 sq.km. with appr. 3 million inhabitants, only 10% of whom were Mongols (cf. also No. 131). Although the Japanese exploited this "autonomous" State for purposes of war, Teh-Wang declared on repeated occasions that creation of a Greater Mongolian Empire -- extending from Buryat Mongolia and the Barga all the way to Chingan, Alashan, and Ordos -- continued irrevocably to be his goal. The Japanese did not even come to his aid to the extent of placing him at the head, for instance, of the Japanese-controlled territories of the Barga and of the Province of Chingan. Since the Japanese intervened even in the purely local affairs of the Mongolian administration, the distrust of the Mongols kept growing during the war, since they came to recognize more and

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more that they were merely being used as the means to an end (cf. No. 139).

A possibility of bringing the Mongols of all the different regions under one government, or at least more or less loosely to unite them, might have existed in 1945, when the troops from Outer Mongolia were helping to occupy the lands of Inner Mongolia and to disarm the Japanese troops. However, as was mentioned in an earlier context, political considerations of a higher order prompted the withdrawal of these troops, and the lands of Inner Mongolia as well as the Mongolian parts of Manchuria remained in Chinese hands. In 1947 the Barga and most of the other parts of the former autonomous Chingan Province of Manchuria were combined with the northern Chahar and certain parts of Jehol and Suiyuan to form the "Autonomous Region of Inner Mongolia" as part of the Chinese People's Republic.; and when the Province of Chahar was dissolved in November 1952 some parts of the latter were likewise included. The capital of this region, until 1952, was Kalgan (Changkiakow); and since then Huhehot has been the capital city. The "Autonomous Region" comprises appr. 700,000 sq.km. with about 6.1 million inhabitants, about 20% probably are Mongols (cf. No. 115, p. 860 ff.; No. 126; No. 130; and Zeitschrift für den Erdkundeunterricht 1954, H.5., Map, edited by W. Heidenreuter; and Shie I-Yuan: Changes in China's Administrative Divisions, in: People's China, 1955 H.10, pp. 28-30). The "Autonomous Region" is subdivided according to "meng" (tribal associations): Chingan Mongols, Ordos Mongols, Huna League; Chahar Mongols, Jerim League; Cho-ota-Association, Silingol League, and so forth. The political distribution of the Mongols in their East and Central Asian main areas of concentration is at present approximately as follows: Buryatmongolskaya ASSR (Autonomous Republic of the North-Mongols); the East-Orda National District of the Irkutsk Oblast, and the National District of the Buryat Mongols in the Chita Oblast of the RSRSR of the Soviet Union; the Mongolian People's Republic (inhabited chiefly by Khalcha Mongols and linked with the Soviet Union by a friendship and assistance treaty); the Autonomous Region of Inner Mongolia (inhabited chiefly by Barguds and Inner-Mongolian tribes), in the Chinese People's Republic; and a number of other Mongolian tribes in the Chinese provinces of Kansu (Alashan Mongols in the former Province of Ninghsia, etc.) and Sinkiang (West-Mongolian groups.

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N O R T H E A S T C H I N A

M A N C H U R I A

(1 9 3 7 - 1 9 5 3)

By Prof. Dr. GUSTAV FOCHLER-HAUKE, Munich

The author's last bibliographic report on Manchuria published in the "Geographische Jahrbuch" covers a period of ten years; it included more than 50 pages of text, and included 600 publications (cf. Geographisches Jahrbuch 53/I, 1938, pp. 275-326); but the report that follows covers far less ground, although it includes a period of 17 years. Some of the 1937 publications received attention in the last report. During the war, however, practically none but Japanese scientists had any opportunity to conduct investigations in Manchuria. Their published work has come out mostly in the Japanese language, and with few exceptions has not become known in the Western countries. The same holds true also for studies on Manchuria that were published by Chinese authors. Since the conclusion of the war, scientific field investigations in Manchuria were precluded by the prevailing political conditions; and for linguistic and other reasons the studies that have appeared during the last few years in the Far East have become known only in exceptional cases. Except for citizens of the Soviet Union, foreign investigators had no possibilities for research in the country itself during the last few years.

Although the number of publications dealt with in the present report may be relatively small, there is occasion to treat of several works of basic importance. An effort was made, moreover, to give the research results in greater detail than heretofore, so as to afford an adequate general view. More space than heretofore was given also to developments that have occurred during and since the war, since these have become little known to the general public.

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The titles of books written in the Chinese, Japanese, and Russian languages will be cited here in German (i.e. English only in this translation), except in those instances where the original publication furnished a title written in the Latin alphabet. So far as possible, the titles were reproduced directly and faithfully from the originals. Any lacunae in some of the bibliographic indications must be ascribed to the conditions prevailing at this time.

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3. Fochler-Hauke, G. : Der deutsche Anteil an der Erforschung Ostasiens (The German Share in the Exploration of East-Asia). (Zeitschrift für Erdkunde, Frankfurt am Main 1940, pp. 351-62.)

During the time covered by this report no separately published bibliography has become known. The work cited under I above, however, contains what has so far been the most extensive bibliography on Manchuria, including 1005 published titles; and this bibliography devotes attention no only to Western publications since the beginning of the 18th century up to about 1939, but also includes references to works published in the Russian, Chinese, and Japanese languages. The more recent report (No.2)lists and discusses publications on Manchuria that have come out in the German language during the time from 1939 to 1946. Although these two reports also include the Barga west of the Great Chingan, this Mongolian marginal region is not treated in the present report, because since the war it has become part of the Autonomous Region of Inner Mongolia and for that reason was given attention in the bibliography on Mongolia. (Cf. the present volume, pp. 187-235.) The share contributed by Germans to research on Manchuria (No. 3) has been quite considerable at all times: Peter Simon Pallas, Gustav Radde, L. v. Schrenk, A. Th. v. Middendorf, and many others have conducted investigations, during the 19th century, in the Russian Amur country and in neighboring parts of Manchuria; their botanical, zoological, ethnological, and cartographic results have retained vallidity to this day. Ferdinand v. Richthofen conducted 1869/70 his basic and permanently valid geological-morphological investigations in southern Manchuria; and it was he who recognized, above all, the basic structural features of the mountain ranges of Liaotung and Liaohsi. The geologist E. v. Ahnert, who had gone to Manchuria in charge of the expedition sent out 1896-98 by the Imperial Russian Geographic

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Society, made the greatest contribution to the studies on that country and spent several decades at work there. The following names call for special mention among the German scientists who conducted field research in Manchuria and have published their results: G. Fenzel (1931), G. Fochler-Hauke (1927/28, 1935/36), O. Franke (1890 and 1896), H. Maier (1927), B. Plaetschke (1932), W. Stötzner (1926-27), E. Thiel (1936-37), and O. Weigold (1916).

2. MANUALS, ANNUAL REPORTS, AND GOVERNMENT REPORTS

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5. Manchukuo Year-Book, Hsinking 1941, 961 pp. (English).

6. Economic Conditions in Manchukuo, publ. by the Foreign Office, Hsinking 1940. 111 pp. (English).

The well-known Year-Books (No. 4, No. 5) continued to be published during the years of the war. Like the numerous reports published by the Ministries in Hsinking (No. 6 et al.), they contain valuable statistical data that will continue to be of value for research on the economic development during that important period of time, even though to some extent these data may only be conditionally valid.

3. MAPS AND ATLASES

7. Manchuria-Terrain, Relief Model prepared by Staff Service Model Section, A.M.S., Department of State, Division of Map Intelligence and Cartography, Washington, D.C., 1946. Appr. 1:5,000,000.

8. Chin-Ching-Yu, Ling Ta-Hsia, and Chin Chi-An: Chung-Hua, Jen-Min Kung-Ho-Kuo Fen-Sheng Ti T'u (Atlas of Provinces of the Chinese People's Republic, 52 Maps, Shanghai 1950 (Chinese).

9. Ting We -chang, Ong Wen-han and Ts'eng Shih-ying: New Atlas of China, 5th Ed. Revised post-war edition by Ts'eng Shih-ying and Fang-Chün. Shanghai 1948. 58 Map Pages, 94 Texts (Chinese).

10. Fuchs, W. (Editor): The "Mongol Atlas" of China by Chu-Ssu-Pen and the Kuang-Yu-Tu. 32 p., 48 Facsimile Map of appr. 1555. Monumenta Serica: Journal of Oriental Studies of the Catholic University of Peking, Mong.VIII. Fu Jen University, Peiping 1946.

Before and during the war the countries interested prepared a large number of maps of Manchuria; but most of these did not reach the general public.

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With the exception of Japan, all of the countries concerned were restricted to the use of compilations. One of these, based on the old Russian 2-verst maps and on more recent Japanese maps 1:100,000, etc., was brought out by the U.S.A. Department of State (No.7) in the form of a relief map. The latter, unquestionably affords a good general impression of the relief conditions, but conveys in many of its details

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a misleading impression of the nature of the surface, especially the course followed by some of the mountain ranges, as for instance in the northern part of the Great Chingan, in the Little Chingan, in Jehol, etc. Some of the recent atlases of China (No.8) contain hypsographic charts in several colors, and the political divisions are shown. The northeastern provinces are shown on a scale of 1:3 million or (No.9) of 1:5 million. An outstanding accomplishment is the edition, by W. Fuchs (No.10), of the "Mongol Atlas," which is of great historical interest also so far as the study of Manchuria is concerned.

4. GENERAL ACCOUNTS, RESEARCH REPORTS, DESCRIPTIONS OF PARTS OF THE REGION

11. Cressey, G.B.: Asia's Land and Peoples. 1st Ed. New York 1944. Includes a brief account of the Manchurian area.

12. Fochler-Hauke, G.: Die Mandschurei (Manchuria). Heidelberg 1941. 448 pp. Maps, Index.

13. --: Die Mandschurei (Manchuria). (Handbook for Frontier Germans and Germans Abroad 3, Breslau 1940.)

14. Il Manchoukuo, Geography, History, Economy. Milano 1940. Compilation of several articles, based in part of No. 12.

15. Imanishi, Kinji: Ecological Observations of the Great Khingan Expedition. (GRev., New York 1950, pp. 236-53, Maps, Pictures.)

16. Lautensach, H.: Der Geographische Formenwandel (Geographic Morphological Changes). Bonn 1952, p. 144 ff.

17. Manchukuo To-day. Publ. by the Foreign Office at Hsinking 1940. 10 pamphlets. Politico-Economic survey against a background of propaganda.

The first complete geographic account of Manchuria (No.12) was based on its author's own extensive travels and on a comprehensive bibliography. After first surveying the country's location and area, and its the history of its exploration, the book treats of the country's fundamental geographic traits. Emphasis is

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placed upon the general traits of extensive unified landscapes. The geographic core of the country as a whole, the Manchurian Plain, is a tectonic depression delimited by fractures and warps, and is filled out chiefly with quaternary deposits. The ancient substrata appear at the surface only in individual localities. Details of the morphology vary greatly from one place to another. For thousands of years this plain has witnessed great migratory movements of the populations. At present it is settled almost exclusively by Chinese families and constitutes the core of the country's economy. The Southwest-Manchurian Mountain Land, which essentially coincides with that of Jehol, is likewise one of the anciently settled areas. It is possible to distinguish a number of geological-morphological zones. The rock types of the table-formation are approximately analogous to the Taishan-Complex of China. The intermediate zone has Sinisian and palaeozoic folded limestones pushed, to some extent, over mesozoic sediments. The general structure was determined primarily by the mesozoic foldings of the Yenshan Movement. The formation of the present relief

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(Map, p. 241) NORTHEAST CHINA (MANCHURIA)

LEGEND: See - Lake; Japanisches Meer - Sea of Japan; Grosser.. - Great..; Kleiner.. - Little; Golf von .. - Gulf of ..; Mandschurische Ebene - Manchurian Plain; Ebene - Plain; Hügelland und niedriges Mittelgebirge - Hill Country and Lower-Medium Mountains; Landschaftliche Gliederung - Main Divisions of the Landscape; Südwestmandschurisches Bergland - Southwest-Manchurian Mountain Land; Ostmandschurisches Bergland - East-Manchurian Mountain Land.

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started out with tertiary elevations and faults accompanied by eruptions, the latter being revived during the quaternary period. The climate and the flora exhibit a transition from Central-Manchurian, North-Chinese, and Mongolian conditions. The Mongolian population was crowded out, by Chinese colonists, toward the northern marginal regions. The Great Chingan, up to 40 km. in width and appr. 1,400 km. in length, attains at only a few points an elevation of 2,000 m., and has predominantly the characteristics of subdued mountains. The palaeozoic folding, like the marginal fractures of later date, has no direct connection any longer with the current relief. Ever since von Richthofen's investigations this relief has been regarded as one of the

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great East-Asiatic marginal step faults; and it constitutes a marginal upthrust which drops off at a fairly steep grade to the Manchurian Plain, and at the same time rises as a clearly distinct relief feature above the level of the Mongolian Highland. Despite the savage destruction of forests in recent times the northern and central parts of the mountain ranges have to this day predominantly a forest cover, with Chinese colonists settled in the valleys, though remnants of Tungusian elements can still be found roaming about in the North. Little has become known, so far, concerning the fundamental geological-morphological traits of the Ilchur-Alin and the Little Chingan. Recently active volcanoes are to be found along the southern edge of the latter and point to continuation of the tectonic movements. Conditions in the west indicate close relations with the northern portions of the Great Chingan; but in the East can be noted a transition from the latter's larch and birch forests to the abundant mixed deciduous forest of the East-Manchurian Mountain Land. The East-Manchurian Mountain Land is subdivided into a northwestern and a southeastern portion by the Suifun-Chanka Depression and the Mutankiang fault trough; it forms a highly varied upthrust zone the structure of which is extremely complex. It exhibits disconformities as between the Archaeozoic and the Algonkian systems, and also within the latter itself. The latest powerful faultings occured subsequent to the Jurassic or during the Upper Cretaceous. The coal-bearing Oligocene strata of Fushun were affected by mild faultings. Formation of the fractures, some of which date back to the Quaternary, was accompanied by extensive volcanic effusions. The volcanic annular mountain range of the Paitoshan rises within a fracture zone that is locatedat the beginning of the Tungusian and Korean bends of Richthofen's Manchurian step fault. The Mountain Land, relatively humid,and warm in the summer, ranges climatically between the areas of steppe climate in the west and an oceanic climate, humid and cooler, in the east. The flora and fauna are characterized by penetration of northern and southern forms. An analogous penetration prevailed originally also with respect to the population. The Tungusian tribes, united during the 17th century under the name of "Manchurians," have long since been crowded out by North-Chinese steppe peasants, who penetrated along the valleys. Rice-farming Koreans penetrated into the swampy valley landscapes. In the North, on Ussuri territory, small remnants of Goldi are still surviving. A distinct position is occupied, in the south, by the Liaotung Peninsula,

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which has become the most important point of departure for foreign economic and political influences.

The same author gives a detailed account of the towns and villages, where the North-Chinese colonial style predominates. Some of the cities, such as Harbin, Mukden, Changchun, and Talienwan, have exhibited an American rate of growth in connection with modern industrial development. The history of the Manchurian area is characterized by an extremely rapid succession of varied conjunctures; and in relatively recent times Manchuria has been one of the most important bones of contention of world politics. The book devotes attention especially to mutual relations among the different individual races, especiallythe cultural and economico-social contentions between nomads, semi-nomads, and sedentary peasants. The extremely rapid victorious progress of the Chinese colonists is possibly, in its own way, unique. Its massed power and momentum exceeds in some respects all other similar processes witnessed in Asia; and this holds true particularly of the more recent epoch, initiated by Czarist Russia and by Japan, an epoch which revolutionized nearly everything and has brought great success especially in the industries and in mining.

H. Lautensach (No.16) in his basically important treatise on the systematics of the landscape (Geographic Morphological Changes) briefly treats also of Manchuria and the neighboring lands. He considers that parts of the Manchurian step fault, which is composed of strikes extending SSW-NNE, argue strongly in favor of the assumption of stratigraphic divisions in keeping with an east-western direction of changes. In the basic climatic characteristics, likewise, he discerns a systematic progress of change in the way of interference with of "planetary changes with the east-western or centripetal changes." Changes as to the level of vegetation he exemplifies particularly by reference to the Chingan and the Paitoshan. On the basis of his investigations, finally, he assigns to Manchuria a place in the schema of landscape divisions he had developed for a very broad expanse of Asian territory, although he passes rather briefly over the cultural geographic factors.

Imanishi (No.15) accompanied in 1942 an expedition that moved from Hailar up along the Gan River into the region of the sources of the Bystraya; and

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to some extent he worked in areas where the German geographer Bruno Plaetschke, whose untimely death is to be regretted, had made important investigations. It was there that Imanishi's group met with members of an expedition that had started out from Amur (Moho). Special attention was devoted to the ecological conditions of the Daurian larch forests (Larix Gmelini), of the so-called forest steppe, and of gallery forests in the northern part of the Great Chingan region. Toward the east, the expedition also studied the narrow belt of deciduous forest (Quercus mongolica) located between the larch forest and the Manchurian steppe plains. Traces of quaternary glaciation caps were not found. The amount of settlement in these regions is extremely meager. The "horse-riding" Orochons, one of the northern Tungusian tribes, live chiefly on the forest steppes, as for instance along the Gan River; but parts of their former haunts in the lower valleys were lost to Chinese and Russian peasant colonists. They live in cone-shaped pole yurtas, leading a very meager existence. The products of their hunt are used for their own supply and for barter trade. They use rifles nowadays, and cover larger areas since they have been using horses. According to Imanishi their mode of hunting, well-adapted for taiga regions, represents ecologically a "climax phase" and should, from a technical point of view, not be regarded as rating lower than the Chinese pioneer methods of farming. The "reindeer-riding" Tungusians, who are erroneously called "Yakuts" by the "horse-riding" Tungusians, originally immigrated from Sibiria and live in the central and northern parts of the territory investigated by the expedition, especially the areas that drain into the Bystriya, where the "barren grounds" support everywhere a growth of Cladonia, a plant that is typical for the upper tundra regions and indispensable as food for the reindeer. Just as the "horse-riding" Orochons do not eat horseflesh, the "reindeer-riding" Orochons do not eat the flesh of the reindeer, though both groups -- who, by the way, do not communicate with one another -- drink the milk of their respective animals. The hunting territory covered by the "reindeer" Orochons is richer than that of the "horse" Orochons, so that their standard of living appears to be higher. Moreover, they maintain close contact with Russian civilization and have to some extent accepted Orthodox Christianity, while their relatives of the other tribe have continued as Shamanists. The Russian pioneer settlers engage in a mixed economy based on agriculture and stock-farming; and in the forest steppes they show a pref-

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erence, in the forest-steppe areas, for locations on the hill and mountain slopes rather than those in the valley bottoms, where the danger of frost is greater. The Chinese agricultural pioneers have shown less capability for adapting themselves than did the Russians; and they use part of their products to supply the Chinese gold miners, who, in the North, must be regarded as properly speaking the pioneers.

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5. GEOLOGY AND GEOMORPHOLOGY

18. Ahnert, E.W.: Geological Researches along the North-Manchurian Railway in the Great Chingan. (Reports of the Institute of Scientific Research of Manchukuo, Hsinking 1938, II, No. 3, 12-42.)

19. --: History of Research (especially geological research) and of Mining in Manchuria. I vol. of text, carton binding, Tokyo (Russian).

20. Kudo, S., and S. Yabe: Report on the Coal Fields and Oil-Shale Deposits of the Feng-Ning District, Jehol. (Bull. Geol. Inst., Dairen 1937, pp. 35-39, 1 Map (Japanese).

21. Machatschek, F.: Das Relief der Erde (The Relief of the Earth), I. Berlin 1955, p. 287 ff.

22. Ogura, T.: Erkoshan Volcano, Lung Chiang Province. (Survey Reports of Volcanoes in Manchuria, No. 2, Ryojun 1938, 21 pp., Tables, Map (Japanese and Engl. Z. (numerals ((?)).

23. Sasakura, Ueda, et al.: Geological and Minery Description of the Southwestern Part of Manchuria. Dairen 1937, 153 pp., Pictures, Maps (Japanese).

24. Tada, F.: The North Manchurian Basin. (Bull.Geogr.Inst. of Tokyo University, 1950, 161 pp. (Japanese and English Z. (numerals?).

25. Topographical and Geological Description of South-West Manchuria (Jehol). Publ. by the Geol.Inst. of the South-Manchurian Railway, Dairen 1937. 158 pp., Pictures (Japanese).

26. Fochler-Hauke, G.: Eduard von Ahnert. (Die Kultur im Leben der Völker, Munich 1941.)

27. Plaetschke, B.: Eduard von Ahnert. (PM 1939.)

28. Deasy, G.F.: Landform Regions of Manchuria. (Ann. of the Ass.Amer.Geographers, 1941.) An attempt to establish morphological divisions.

The treatise by E. v. Ahnert (No.19), which has been published also

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in a German edition, is one of the most informative books so far published on the subject of Manchuria. A large portion o the text is devoted to an account of important research expeditions: Poyarkov, Khabarov, Stepanov, Pashkov, and other Russian scientists, who worked chiefly in the northern part of the territoy; and others, down to v. Richthofen, Cholnoky, and Fritsche, who were active primarily in the South; and the expeditions of recent years, which are given particularly detailed treatment by v. Ahnert. However, emphasis is placed by that author at all times upon the geological problems and upon the existence, discovery, and exploitation of the underground wealth. Ahnert was the best among geological experts on Manchuria and had himself discovered several important coal deposits, so that he was particularly well qualified to give a chronological account of the geological investigation of Manchuria. (Nothing has become known concerning the ultimate fate of this scientist, who is known to have still been residing in Manchuria during the period of the last war.) Fochler-Hauke (No.26) and Plaetschke (No.27) both have eulogized this pioneer of research, who had proffered extremely valuable advice, to them as well as to others, in the course of their expeditions.

The before-mentioned treatise not only furnishes a history of mining, but also, in dealing with the riches of the subsoil, a competent estimate of the

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existing reserves and of the possibilities of exploitation. The text itself of this important treatise is supplemented by a large number of maps that show the routes followed by research expeditions and the distribution of the underground wealth. In another treatise, Ahnert (No. 18) summarizes the results of recent research in the railroad area of the Great Chingan, showing them in relation to earlier investigations, in which he had himself an important share. The Japanese geologist Ogura (No.22), one of the best geological experts on Manchuria aside from Ahnert, has contributed an excellent study of the group of volcanoes located on the northern edge of the Manchurian Plain, pointing out that these volcanoes presumably rest upon a cretaceous base. They rise out of Pleistocene deposits; and they are not known to have had any recent eruptions, in contrast with the volcanoes of the Wutalienchi Group, which are located farther north. Tada (No24), to whom we are indebted also for basically important studies on Jehol, has investigated the North-Manchurian Plain and reached the con-

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clusion that its present form is the result of the action of morphological forces connected with the replacement of arid conditions by a humid climate. F. Machatschek (No.21) includes in his globe-covering opus a short survey dealing with the geomorphological basic traits of Manchuria.

6. FLORA AND FAUNA.

29. Katigawa, M.: Lineamenta florae Manchuricae. (Rep. of the Inst. of Sc. Research of Manchukuo, 3., Appendix 1, Hsinking 1939.)

30. Küchler, A.W.: A New Vegetation Map of Manchuria. With text-map "Natural Vegetation of Manchuria" by A.W. Küchler and M. Takenuchi. (Ecology, vol.29, No.4, October 1948.)

31. Lukashkin, A.S.: On the Avifauna of North Manchuria. (Rep. of the Inst. of Sc. Research of Manchukuo, III-1, Hsinking 1939. 32 pp. (English.)).

32. Takahashi, M.: Studies of the System of Plant Ecology Based on Field Investigations made in Northern East Asia. (J. of the Fac. of Sc., Imperial Univerv., Tokyo, Sect. III, 5, Tokyo 1944, 427-649.)

33. Takenuchi, M.: A Preliminary Report on the Conifera Indigenous in Manchukuo, with Special Reference to their Taxonomy and their Distribution. (Zikkenri-Ziko

Of great interest is the study recently brought out by Küchler in collaboration with Takenuchi, where Manchuria is subdivided, according to its physiognomic types of vegetation, in accordance with the vegetation card-index system devised by Küchler. The small map provided with this volume (1:12,000,000) indicates forests of larch and evergreen coniferous trees for the northernmost parts of the Great Chingan, Ilkhur-Alin, and Paitoshan, and evergreen coniferous forest for large portions of central parts of the East-Manchurian Mountain Land. The central parts of the Great Chingan are shown to have a cover of medium-high larch forest. The East-Manchurian

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Mountain Land is kept distinct as having tall xied forest consisting of deciduous trees and evergreen conifers. Southern Manchuria, according to this map, is an area of medium-high deciduous forests, and the same holds true for a major portion of the Northwest-Manchurian plain, while the southwestern plain is represented as a savannah with medium-high grasses and interspersed deciduous trees. The eastern Barga and the Argun Valley are also shown as savannah land, but with short grasses. Grass lands

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are entered, on this map, for the East-Barga and for small areas on the West-Manchurian Plain. In keeping with the author's methods, the floristic aspects are left out of consideration entirely. The treatise in question is beyond doubt highly valuable, yet it fails to do full justice to the extraordinary variety of Manchurian plant life. The comprehensive Soviet literature on the subject has not yet been sufficiently evaluated (cf. Bibliography in No.2). The extent of forest destruction is actually far greater than the author assumed. A large portion of the Manchurian Plain originally consisted of grass steppe. The southern part of the East-Barga does not have a short-grass savannah with groups of deciduous trees, but consists in reality of a grass-and-herb steppe with scattered groups of pine (Pinus silvestris L. var mongolica Litw.), while the western Barga partakes chiefly of the nature of a wormwood-herb steppe, and not that of a grass steppe. Along the edges of the northern Great Chingan are to be found strips of typical forest steppe (with birch). Along the lower Sungari the Mountain Land with its mixed forest extends in many instances all the way to the banks of the river, leaving no space for the development of gallery forests. Lukashkin (No.31) gives a systematic account of the fauna of the North, which belongs chiefly with the Sibirian Sub-Region, and is marked by a great amount of penetration of northern and southern elements. The Amur tiger, frequently encountered in the earlier days, is now become quite a rarity.

7. HISTORY, POPULATION, COLONIZATION

34. Dörbeck, F.: Das Mandschurische Küstengebiet und die Udeheer (The Manchurian Coastal Regions and the "Udeheer." (Udede) (Asien-Ber., H. 9,10,11/12,15/16,17,18,19, 1943.)

35. Eberhard, W.: Kultur und Siedlung der Randvölker Chinas (Culture and Settlement of the Marginal-Area People's of China). Leiden 1942.

36. Eickstedt, E. v.: Rassendynamik von Ostasien, China, Japan, Tai und Kmer von der Urzeit bis heute (The Dynamics of Race in East-Asia, China, Japan, Tai (Thailand) and Cambodia, for Primitive Times until To-day). Berlin 1944.

37. Fochler-Hauke, G.: Staatsidee und Nationalitätenpolitik in Mandschutikuo (The Concept of the State, and Nationality Policies in Manchukuo). (Volksforschung, 5, Stuttgart 1941.)

38. Franke, O.: Das Volk der Khitan und seine Sprache (The Khitan Nation and its

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Language. (Forsch. u. Fortschr., Berlin 1940, p. 280 ff.)

39. Michael, F.: The Origin of Manchu Rule in China. Baltimore 1942. 127 pp.

40. Newel, N.: Hsinking. (Dt. Kolonialztg., 51, H. 2, 1939).

41. Schwind, M.: Bei den ersten japanischen Kolonisten in Mandschukuo. (Ost-Asiatische Rundschau, 20, Hamburg 1939.)

42. --: Schwierigkeiten und Erfolge japanischer Kolonisation in Mandschukuo (Difficulties and Accomplishments of Japanese Colonization in Manchukuo). (GZ., Leipzig 1940.)

43. --: Wanderrichtung des japanischen Bevölkerungszuwachses (Direction of the Migration of the Population Increases in Japan). (GZ., Leipzig 1940.)

44. Slawik, A.: Mandschu. (In: A. Bernatzik: Grosse Völkerkunde, II, Leipzig 1939.)

45. Yamaguchi, H.: Some Notes of Villages of Northern Manchuria. (Kimbun Chiry "Anthropogeography," Tokyo 1949 (Japanese, with English title.)

46. Evers, W.: Die Entwicklung der Saisonarbeiterbewegung in Mandschukuo (Development of the Seasonal Labor Movement in Manchukuo). (Ztschr. f. Erdk., 12, 1944.)

The treatise by Michael (No.39) makes use to some extent of materials from the archives of the Manchu Dynasty, which have during the last few decades evaluated by a large number of investigators; and it offers an excellent introduction to the nature of Manchu policies. It appears that the Manchus were well prepared culturally as well as from the military and political point of view at the time they left their original native home to proceed to the conquest of China, and that they were capable of skillfully exploiting the Chinese political ideologies with a view to adapting them to the Manchu principles of administration. They made a conquest first of all of Liaoning, where they secured for themselves a solid base in the midst of a Chinese agricultural region. At the same time they developed a system of "banners" adapted to certain models that had been furnished by the Ming Bureaucracy; and in doing so they strengthened the position of the monarch, at the expense of diversified tribal characteristics. The Manchus also proved themselves capable of preserving, even after establishment of their dominion in China, a certain independence with regard to their political and social-cultural organization. Slawik (No.44) gives a brief survey dealing with the racial descent, culture, and religion of the Manchus;

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but it erroneously estimates their number at 6-7 million, whereas actually their number is not likely to have exceeded 3 million (cf. No. 2, p. 355, where one can find also a detailed account of relations of the Manchus with the neighboring nations and of their gradual assimilation by the Chinese civilization; cf. p. 261 ff.). Von Eickstedt (No.36) and Eberhard (No.35), whose treatises are devoted to China as a whole and to the larger subdivisions, also include comment specifically on Manchuria, a topic for which the boom by Eberhard, especially, is of importance. The function of South-Manchuria as a bridge for national migrations from China to Korea and Japan is clearly brought out in his account. Dörbeck (No.34) treats of the "Udeheer(Udeche tribes, a Tungusian remnant, who have survived in small groups in the southern part of the Ussuri country, and who, apart from the Goldi, were more strongly influenced by the Chinese than any of the other Tungusian tribes. Franke, a leading expert on East-Asiatic history, examines from a new perspective the origins and language of the Khitan. Starting out from Manchuria as a basis, the Khitan founded during the

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10th century the powerful empire of the Liao Dynasty. One might say they were the first to introduce Manchuria into the general background of the world's history.

Newel (No.40) gives a description of Hsinking, a city which side by side with the old town of Changchun (whose name it now bears again) was developed, through Japanese initiative, into one of the most modern administrative centers in East-Asia and functioned as the capital of the short-lived Empire of Manchukuo. As result of its favorable location Hsinking has retained its importance to this day. Yamaguchi (No.45) furnishes one of the few detailed studies available on the subject of the Manchurian village. Schwind (especially No. 41 and 42) deals with the methods by which the Japanese chose colonists for Manchuria, and also with the economic and general prerequisites of the fluctuating success of the Japanes colonizing effort (cf. also No. 2, p. 289 ff.). The Japanese settlers were returned to Japan after the close of the Second World War. Part of the Korean population, likewise, was settled elsewhere. Evers (No.46) examines the problem of the Chinese seasonal workers, increasing numbers of whom were brought from North China to Manchuria at the turn of the century, in connection with the modernization of Manchuria, and who in numerous instances remained there as settlers. At first the Japanese cut off this influx, but had to rescind their measures, in view of the great demand for additional

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agricultural and industrial labor forces. Fochler-Hauke (No.37) analyzes the policy of nationalities adopted in Manchukuo under Japanese leadership. Its aim was to segregate the great masses of Chinese in Manchuria culturally and politically from the native country, and at the same time to weaken them by promoting Korean and Japanese colonization and by lending support to non-Chinese ethnic groups. With this purpose in mind special economic, cultural, and political support (autonomy for the Mongols) was granted to Mongols, Koreans, Daurians, and so forth.

8. ECONOMY AND COMMUNICATIONS

50. Chesneaux, J.: La vie économique de la Chine Nouvelle(The Economic Life of the New China). (Ann. de Geogr., No. 319, Paris 1951, pp. 88-109 (French).)

51. Ginsburg, N.: Manchurian Railway Development. (Eastern Quarterly 1948/49 (English.)

52. Graydantsev, A.J.: Manchuria: An Industrial Survey. (Pacific Affairs XVIII, No. 4, Orange, Con., 1945, pp. 321-39 (English)).

53. Ischboldin, R.: Die Goldindustrie Mandschukuos (The Gold Industry in Manchukuo). (Osteuropa-Markt, Königsberg 1937, pp. 534-39.)

54. Krejci-Graf, K.: Kohle und Eisen in China (Coal and Iron in China). (Natur und Volk, 69, 1939.)

55. Lübke, A.: Kohle im Fernen Osten(Coal in the Far-East.) (Der Querschlag, 5, 1939.)

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56. Matsushima, K.:(The Development of Agriculture in Manchukuo):"Die Entwicklung der Landwirtschaft in Manchukuo." (Ostasiatische Rundschau, 20, Hamburg 1939.)

57. Rodgers, A.: The Manchurian Iron and Steel Industry and its Resource Base. (GRev XXXVIII, No. 1, New York 1948, pp. 40-54.)

58. Schumpeter, E.P. (et al.): Industrialization of Japan and Manchukuo 1939/40, New York 1940 (English)).

59. Sera, S.: Die Schwerindustrie Manchukuos (The Heavy Industries of Manchukuo). Ostasiatische Rundschau 20, Hamburg 1939.)

60. Thiel, E.: Mandschukuo. Führer durch die mandschurische Wirtschaft(Manchukuo. A Guide through the Manchurian Economy). Königsberg 1939. A short introduction with statistical data.

61. --: Die Schafzucht Mandschukuos (Sheepraising in Manchukuo). (Z. Schafzucht, 29, 1940.)

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62. Wischniakowsky, B.: Ein vierzigjähriger Kampf um die Verkehrswege der Mandschurei (A Forty-Year Struggle for the Traffic Routes of Manchuria). (Ostasiatische Rundschau, Hamburg 1938, pp. 487-89.)

63. Glushakov, P.Y.: Manchuriya: Ekonomiko-geograficheskoye opisaniye (Manchuria, an Economico-Geographic Account). (Russian.) Moscow 1948.

Fochler-Hauke (No.2, p. 293 ff.) gives an account of the economic development of Manchuria since the last century and up to the beginning of the Second World War, with special attention to conditions during the Japanese Occupation. Little information has reached the West concerning developments during the war and in the most recent types. Prior to 1945 the agricultural output amounted, as an average, to 4 million t. of soya beans, 4.5 million t. of Kaoliang, 3 million t. of ordinary millet, 2.5 million t. of maize, 1.5 million t. of wheat, and 700,000 t. of rice. The cattle holdings prior to 1945 included appr. 5.3 million hogs, 2 million sheep, 1.8 million horses, 1.7 bovine cattle, 1.2 million goats, and appr. 1 million donkeys and mules. The agricultural output suffered at first, due to conditions during the last years of the war and during the earlier post-war years. Since that time there has to some extent occurred a fundamental change. The large land-holdings were broken up. It seems probable that appr. 2 million peasants had land turned over to them as result of the agrarian reform law of 1947. In a number of areas large state farms have been established. Measures have been initiated to extend mechanization of agriculture. The total agricultural production amounted in 1949 to about 13 million t., and in 1951 to appr. 18 million t. Obviously the wartime and post-war decline had been overcome even at that time, and the level of the 1943 figures had again been attained. In respect of transportation Manchuria is the most highly developed major region of China; and normalization of the means of transportation has had the effect of helping to restore not only the agricultural but also the industrial powers of production. With its 15,000 km. length of rail, in 1943, Manchuria alone was ahead of all the rest of China.

Fairly detailed numerical data concerning the development of mining and industry during the war period are furnished by Graydantsev (No.52) and Rodgers

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(cf. Map p. 251 of the original document).

The Most Important of the Deposits of Underground Wealth.

LEGEND: See- Lake; Wichtigste - the Most Important; Goldvorkommen - Gold Deposits; Kohlenvorkommen - Coal Deposits; Eisenerzlager - Deposits of Iron Ore.

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(No. 57); and Chesneaux (No. 50) supplies some information concerning the most recent times. The estimate of coal reserves as of 1938 was only 5 milliard t.; but in 1944 Taketora Ogata, basing his conclusions on investigations carried through by the Japanese, cites a figure of 27 milliard t., mostly hard coal. The most important of the deposits, such as Fushun and Fuhsien, are located not far from the coast, and also in the vicinity of the great iron deposits of Penshilu and Tungpientao (near Tunhua). The coal of the basins of Hokeng and Mishan lends itself well to coking. Since 1931 (9.6 million; 1938 15 million t.) the output had increased with extreme rapidity to more than 40 million t. in 1944, but after that dropped abruptly as result of war conditions. In 1949 the output was only 11 million t.; but by 1950 it had risen again to 17 million t. Since then, it seems probable, a level of more than 20 million t. has been reached again, so that Manchuria once more occupies an important position among the coal-producing countries. The deposits of oil schist (near Fushun) have recently been estimated at 7 milliard t., with an average oil content of 5-6% of the weight of the schist. Estimates of the iron reserves vary greatly. In 1938 the iron deposits were estimated at a total of 1.8 milliard t.; but according to more recent Japanese estimates the reserves contained in the two main deposits -- Anshan-Kungchangling and Miaoerhkou-Waitoushan -- contain 4.4 milliard t. of low-quality ores. To this must be added 60 million t. of high-quality ores in these localities. The output of iron ore was 924,000 t. in 1931 and 2 million t. in 1943, increasing to 5.3 million t. as early as 1943, nearly 60% of this quantity being supplied by the Anshan district. The crude iron production in 1932 was only about 370,000 t. and in 1937 about 760,000 t., and reached its maximum with 1.7 million t. in 1943. In 1944 only 1.1 million t. were produced, and during the years that followed production declined still further, due to the scraping of plants, and for other reasons. In 1950 the crude iron production amounted to 700,000 t.,

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but since that time recovery has been rapid, since special measures have been taken to aid not only the crude iron production, but all of the heavy industries. In 1935 the crude steel production amounted only to 136,000 t. Later, as result of the construction of steel works of the most modern types, especially in Anshan, bringing their total number up to 17, steel production reached its maximum in 1943, when the Anshan alone produced 1.3 million t. of crude steel. In 1946 production was stopped entirely; by as early as 1950 a total of 540,000 t. of crude steel were again being produced.

Down into the first years of the war great progress was being made by the textile industry (1939: 500,000 spindles and 10,000 looms, providing for one-third of the domestic requirements) and by the chemical industries. Ship-building,

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likewise, has made rapid progress; and shipyards at Dairen (Talienwan, or Dalni) have produced vessels up to 5,000 BRT. Mining and the industries would not have been capable of progressing as rapidly as they did, had it not been for well-planned large-scale development of the sources of energy. The Japanese had planned for the construction of a total of 50 water-power plants of an average output of 3.2 kw/hr. The following were actually built: the great Yalu stations (utilized jointly by Manchurians and Koreans); the new Fengman Plant on the Sungari; the Tsinbu-Lake plant; the Huanyen plant on the Hunho; and a number of other important stations. Upon restoration of the destroyed plants, the total of electric power produced amounted in 1949 to 1.4 and in 1950 to 2 milliard kw./hr.

The conversion of Manchuria from a predominantly agrarian country into a territory where agricultural and industrial production are of nearly equal importance has during the last few years been brought to completion with astonishing rapidity. The value of the industrial output prior to the war amounted probably to less than one-third of the total output, and in 1950 this figure had already risen as high as 43%. Plans anticipated a share of 56% for 1952. In other parts of China only 10%, as an average, of this figure were actually achieved, although the regional differences there are very considerable. In 1950 six-seventh of the industries had been taken over by the State. The preference shown to the heavy industries is evidenced by the fact that in 1950 as much as 85% of all investments were devoted to the heavy industries. The outstandanding position of Manchuria also was brought out by

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the fact that in 1950 Manchuria was the only major subdivision of China where several important branches of industry had nearly reached again, or even exceeded, the level of their pre-1945 maximum output. The same change of the economic structure also was rendered apparent by the fact that, in contrast with earlier times, the majority of laborers immigrating from other parts of China were no longer laborers for employment in agriculture, but for employment in the industries and in ming. The number of immigrants in 1949 was 240,000, while more than a quarter of a million laborers arrived during the first ten months of 1950 alone.

9. GOVERNMENT, ADMINISTRATION, POLITICS, GENERAL DESCRIPTIONS

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65. Bain, H.F.: Manchuria: A Key Area. (Foreign Affairs, Vol. 25, 1946-47, pp. 106 - 117.) Economico-Political observations.

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66. Betonoschin, B.: A Sojourn as Physician in Mandschu-di guo ("Als Arzt in Mandschu-di Guo. (Münchener Medizinische Wochenschrift 1937, pp. 1499-96.)

67. Fochler-Hauke, G.: Geographische Grundlage der neuen Verwaltungseinteilung Chinas. (PM 1953, H.2, pp. 137-39, with Map.)

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69. Slanar, H.: Mandschutikuo, die heutige Mandschurei (Manchukuo, the Manchuria of To-Day). (MGGes.Wien 1943, p. 86.) A brief survey.

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In keeping with the many political changes undergone by Manchuria in the course of her varied career, the country's administrative divisions have been revised and reorganized a number of times. Under the Manchu Dynasty the so-called Northeast Provinces (Tung San Sheng) had for a long time been permitted a certain

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degree of independence; and subsequent to the fall of that dynasty that independence came near (under men such as Changtsolin) amounting to complete authonomy; and the Japanese leased area of Kwantung on Liaotung Peninsula, as well as the territories along the "East-China Railroad," where the Czarist Empire, and later the Soviet Union, had acquired certain special rights, had definitely come to occupy a special position. As result of the Japanese invasion of Manchuria and the foundation of the Manchurian Empire, in 1934, the Manchurian territories became completely separated from China and were incorporated in the Japanese sphere of interests. After passing through a series of administrative reforms Manchuria had, in 1939 , 19 provinces, among them Chientao, a province with certain Korean special rights, and the autonomous Chingan Provinces, where the Mongols enjoyed a certain measure of autonomy. In 1945, after the Japanese capitulation, the country was temporarily occupied by troops of the Soviet Union. Japan had to renounce all her possessions and special privileges. In 1935 the Soviet Union had sold to the Manchurian State the Russian rights to the "East-China Railroad;" but under the terms of a treaty concluded with China in 1945 these rights were acquired anew. After the withdrawal of the Soviet troops of occupation the troops of the People's Government of Peking conquered the Manchurian provinces, in 1948/49. Under the terms of the treaty concluded in February 1950 between the Chinese People's Republic and the Soviet union Manchuria is recognized as an integral part of the former, with all railroad rights reverting to the latter. The ultimate status of the port of Talienwan (Dairen, Dalni), which is under joint administration, is to be determined subsequent to signature of a peace treaty between both Powers and Japan. Under the treaty of 1950 the naval port of

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(Map on p. 255 of the original text.)

Settlements, Railroads, Administrative Divisions.

(The Province of Jehol was dissolved in July 1955. The course followed by the present boundaries has not yet become known.)

LEGEND: Provinzhauptstädte - Provincial Capitals; Landesgrenze - National Boundary; Provinz renzen - Provincial Boundaries; unter - less than; Über - more than; Eisenbahn - Railroad; Eisenbahn im Bau - Railroad under Construction.

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Port Arthur (Lushun, Ryojun) was to be returned to China not later than 1952; but in 1952 the Chinese People's Government requested the Soviet Union to leave the Russian troops there, for the time being, for purposes of defense. These troops have in the meantime been withdrawn.

Under the administrative divisions adopted since 1949 the greater part of the Chingan Provinces, which had been autonomous under the Empire, was joined with the Autonomous Inner Mongolia. Manchuria, at first, formed together with Jehol the "Administrative Zone Northeast" of the Chinese People's Republic. These territories were governed by an Autonomous People's Government functioning under Peking, and covered an area of 879,000 sq.km. with 38,450,000 inhabitants (1952). This Administrative Zone is subdivided into the following provinces:

Liaotung (103,000 sq.km. with 8,560,000 inhabitants), capital: Antung; (220,000 inhabitants). Liaohsi (56,000 sq.km. with 7,390,000 inhabitants), capital: Chinhsien (120,000 inhabitants). Kirin (119,000 sq.km. with 6,390,000 inhabitants), capital: Kirin, or Yungki (120,000 inhabitants). Sungkiang (205,000 sq.km. with 5,150,000 inhabitants, capital: Harbin, or Pinkiang (700,000 inhabitants). Heilungkiang (282,000 sq.km. with 5,520,000 inhabitants, capital: Tsitsikar, or Lungkiang (100,000 inhabitants). Jehol (11[illegible],000 sq.km. with 4,900,000 inhabitants), capital Chengte (100,000 inhabitants). The seat of the Government was at Mukden (Shenyang, 1,500,000 inhabitants). The following cities occupied a special position by virtue of not being subject to the provincial governments: Talienwan-Lüshon (1,100,000 inhabitants); Fushun (250,000 inhabitants); Anshan (200,000 inhabitants); and Penki (100,000 inhabitants). Since the latest changes were enacted, which included abolishment of the Province of Jehol in June 1955, there are now left only the Province of Heilungkiang (capital: Harbin), the Province of Kirin (capital: Changchun), and the Province of Liaoning (capital: Shenyang). The area and number of inhabitants of these new, greatly enlarged, provinces had not become known when the foregoing study went into print.

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SUPPLEMENT TO THE BIBLIOGRAPHY OF

LOWER INDIA, CEYLON, TIBET, NEPAL

(1926 - 1955)

By BOGODAR WINID, Lecturer, Warsaw

A bibliography compiled by Emil Trinkler dealing with the above-mentioned areas was published in 1927 (Geographisches Jahrbuch, Vol. 42, 1927, pp. 3 - 22). It comprised the period from 1913 to 1926, and contained 262 titles. The new study by Ernst Reiter (Geographisches Jahrbuch, Vol. 61, Part I, pp.4 to 175) reports on a period of 27 years and offers 2,166 bibliographic items. The selection had been based on material in possession of the German libraries and those of London. The material cited is distributed over the different individual areas as follows: Lower India (138 pp.), Ceylon and the Indian Ocean (16 pp.), Nepal (4 pp.), Tibet (9 pp.); and to the foregoing are added several supplements (4 pp.) and a list of authors (11 pp.). The author of that bibliography fails to bring out the fact that Tibet is now a part of the Chinese People's Republic. The Portuguese and the French possessions are not treated separately, but together with the publications on India.

All aside from other considerations, the difficulties of the times would have made it impossible for Reiner to achieve completeness; yet his contribution constitutes a great advance as compared with the work by Trinkler, and is thus of value for geographers, orientalists, and other scientists concerned with the areas treated. A number of important titles not listed by Reiter will be found cited in the following by way of supplement to the various individual sections of his compilation.

In its main division, "Lower India," Reiner's Section I ("Reference Works - "Informationsmöglichkeiten") lists 38 bibliographic items in the way of statistical journals and year-books. Under this heading a few important titles must be added here, notably those of the most recent statistical publications (No.1 and 2);

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and it should also be noted that the headquarters for official statistics have been transferred to New-Delhi, with the result that the titles of some of the relevant publications have been changed. To be newly added here are the compilations by G.B. Cressey (No. 200) and Shannon McCune (No.201). Reiner's list of periodicals is limit-

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ed entirely to Indian geographic publications, and omits the European and American publications that deal with Asia (e.g. the "Journal Asiatique"), and omits Indian special publications in narrower fields such as geography, economics, and the like. In dealing with books and pamphlets published as part of a series Reiner does not indicate the composition of series as a whole, and also fails to list the large number of official publications that give information concerning the economic condition of India (No. 8, 97, and 203).

In his Section II ("Geographic Research") Reiner included, in addition to works that have reference to the history of India, the works that deal with topographic and cartographic questions. He does not, however, furnish a list of the maps that have appeared -- neither individual maps nor series of maps; and consequently his data do not enable us to form a clear idea of the present status of topographic surveys of the country. Two summary accounts that have been published since the war (No. 3 and 4) furnish a certain amount of information on that subject.

The third Section, "Indien in Einzeldarstellungen" (Accounts of ~~India~~ Separate India), lists both, studies in which India is treated separately, and those where India or parts thereof are made the subject of a general account, also including travel reports. Quite a number of titles belonging under this category have to be added here (No.507, 10-14).

Section IV, "Geology and Physiography," comprises 320 titles cited by Reiner, who distinguishes between general and regional accounts, the latter being subdivided further according to major geographic regions (Himalaya and secondary groups, Brahmaputra Valley, Ganges Plain, Indus Plain, and Indian Peninsula). Here, again, several additional works need to be mentioned (No. 15,20), which have contributed greatly to our knowledge of the terrain.

With regard to Reiner's Sections V-X it must be noted that the various individual subjects were quite unevenly treated by him. The part on "Seismology and Geophysics" has 25 titles, "Soil Study and Erosion" 19, "Hydrology and Oceanography" 35, "Climatology" 67, "Flora and Forestry" 38, and "Fauna " has 9 titles. Moreover, the choice of titles is extremely casual, and quite a number of important accounts (No. 21-29, 186-189) were omitted by him. A number of important titles (30-41) need to be added also under Section XI, "Man in India, and his Activities,"

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a section that deals with the early historical background, ethnology and anthropology, distribution and movements of the population, religion and social problems, and questions of hygiene and sanitation.

Under Section XII, "The Cultivated Landscape," Reiner presents in 189 titles the literature on problems of irrigation, agriculture, and settlement. In his opinion the general traits of the landscape are not influenced by man's economic activities. By way of correction one may point to a large number of studies (No. 42 - 108) that were left unmentioned by Reiner.

Section XIII, "Economics," is broken down by Reiner in such manner that the general accounts are cited after those dealing with individual parts of the country or with individual problems; and the latter are followed, in turn, by studies dealing with the industries, with commerce, and with communications. The 171 titles listed by him are the result of an extensive choice, so that a number of important titles (e.g. No. 109-163) were left unmentioned. Problems concerning the fisheries (No. 164-168) are left out altogether. In some instances more recent editions are available. Thus the treatise by Vera Anstey (Reiner's No. 1448/49) is now available in its fifth edition, and not merely in the third. In the case of the study by R.N. Dubey (Reiner's No. 1466) the years of publication is 1946, and not 1939.

A section on "Political Problems" (50 titles) has reference to the problems of the former British India; and the main body of Reiner's bibliography, the part that treats of Lower India, concludes with 32 titles on "The Division of India" ("Die Spaltung des Landes").

In the Chapters on Ceylon, Tibet, and Nepal Reiner does not follow a uniform procedure as to the arrangement of subject matter; and among the titles on Ceylon, especially, one misses indications relating to the important subject of industries. Generally speaking, quite a large number of titles have to be added on the subject of Ceylon (No. 169-186, 191-199).

Some of the persons included in the List of Authors appear under different names there, as for instance Ahmad Nafis (p.176) = Nafis Ahmad (p. 182); Ahmad Kazi, S. (p.176) = Kazi S. Ahmad (p. 180) - the correct form is Kazi, Saeeduddin Ahmad; Kedarnath Srivastava (p. 181) = Srivastava Kedarnath (p. 185). Likewise identical are the names Vakie, C.N. and Vakil, C.N. (p. 185).

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Reiner limited himself in his bibliography essentially to the German, English, and part of the French literature. Italian studies are less fully represented, and Soviet-Russian publications, as well as those of Asiatic countries (ex-
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cept India) are not cited.

(1) The author of the supplements presented in this article would like to take advantage of the opportunity to express certain wishes concerning the form of reports brought out, in future, in the Geographische Jahrbuch. -- The reports given should be more of a practical nature, i.e. they should not only furnish a more or less complete survey of the extant literature in question, but should also convey information concerning the current status of geographic research dealing with the respective country or countries, and concerning the aims aspired to or accomplished. The bibliographies should be complete so far as the literature in the ~~xxxxxxx~~ bibliographer's own language is concerned, and there should be no important lacunae in the lists of foreign literature. The connecting text, it seems, should deal with the organization of additional research, with studies undertaken or completed, and with the plans formulated by geological, meteorological, geodetic, and cartographic bureaus, inclusive of work in the fields of economics and economic planning; and this should be done in connection with an account of new developments in the respective sciences. Special emphasis should be given to government offices entrusted with geographic work, both in the way of research and teaching. By way of supplementing the text of the report, small survey charts or maps should be added, exhibiting the current status of progress on geodetic and geological surveys and in the cartographic representation of each country, as well as the rules of observation, and the like. Each report should start out from a treatment of individual elements of the geographic milieu, treating the country as a whole. Next in order would then follow the monographs and after them studies on individual regions. The report should not fail to give a list of periodicals used, publications in series, special bibliographies, and special libraries. Throughout the arrangement of the bibliography account should be taken of the country's current political subdivisions; and the country's national accomplishments must be given full expression.

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N E W Z E A L A N D

(1938 - 1952)

By Dr. Ernst REINER, Canberra

As seen from Europe, New Zealand is even farther removed than Australia from the general view of geographic observation. For the period from 1927 to 1937 R. Geisler (Geogr. Jahrbuch 53,II, 1938) counts only 86 studies. Now that another fifteen years have elapsed approximately 300 publications have been added. This serves to indicated that during the period under consideration in this article a basic change has taken place.

An interest taken by the New Zealanders in their own country and its geographic exploration was evinced in 1945 by the foundation of a Geographic Society and by the publication, in connection with the latter, of a periodical entitled "The New Zealand Geographer," which maintains an uninterrupted flow of contributions toward systematic knowledge of the country. The most modern means of geographic investigation are kept available for study, as for instance the photographs taken from the air. The official map of New Zealand, on a scale of 1:63,333 (i.e. 1 inch = 1 mile), was composed from photomaps and affords valuable assistance. The contributions so far published during the eight years of the New Zealand Geographer (NZG) are without exception well balanced and include, in addition to important articles on the country's morphology, also many valuable studies on the cultural geography. A general survey of the totality of the geographic researches brought out during the period covered by the present report reveals, however, that during the time from 1938 to 1952 a very definite emphasis was placed on the problems of morphology. None the less, even the relatively small number of published investigations of the cultural geography clearly reflect the changes that have taken place, within only a small number years, in the economic life of New Zealand. These changes have affected not only the social structure but also the general physiognomy of the population. It can also be noted that an increasing amount of thoughtful care has been devoted to investigations dealing with the relations between the whites and

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the native population, the Maoris, concerning whose social structure and settlements a large number of studies have been published that partake more of a historical character.

Taken as a whole, the publications cited in the following furnish a good geographic cross section of New Zealand; but strange to say, apart from a very small number of more general accounts and compklations the geographer does not yet have at his disposal a complete geographic treatise covering both of the islands.

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A comparison of the two main islands with respect to their location and importance was drawn up by King (No.26.). All of the other studies are concerned only with parts of the islands, especially the South Island(No. 27), and many of them are accompanied by good photographs. Basing his work on excellently interpreted air photos, Cumberland (No.27) has shown (with good photos in many instances) the divisions of the Canterbury territory, while Pascoe (No.28) treated only of the mountainous portions of the land, putting emphasis on an account of the hardships of the life of the sheep-owners. One of the coastal sectors was studied by Jobberns (No.29), making the railroad line an occasion merely of the confines of the territory. An

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Since the geography of New Zealand is treated mostly in connection with that of the far greater land mass of the Australian continent there are hardly any separate bibliographies of New Zealand to be found, although a survey of the primarily economic studies (No.1) proves fairly helpful. Just as in other recently acquired territories of the British Commonwealth that are dependent upon immigration from Europe, the Government has either itself published a series of pamphlets to provide information or has caused them to be published. These pamphlets afford a general survey of the land and its economic development, and contain good photographs. The Official Yearbook (No.3) furnishes good information concerning all statistical data. The Census of 1945 also has been published separately with all details (No.4).

When the Second World War strongly involved the mother country -- and also subsequent to 1945 -- more attention came to be devoted to the territories that had been spared the sufferings of war. Accounts like those of Harrop (No.5) or Nash (No.7) called attention to the outright paradisal social conditions prevailing in some of those countries. Consequently a number of studies concern themselves with these more or less political questions. A light touch of propaganda is unmistakable. Among all these a particularly eminent position is occupied by the book of Belshaw (No.10). In a number of chapters prepared by different authors this book affords a sound geographic general view. Clark describes the natural contours of the land, as well as the cultured landscape. Sutherland devotes a detailed discussion to the problem of the Maoris and the half-breeds, and the pakehas. Beaglehole, who is thoroughly familiar with conditions in New Zealand, wrote a history of the country's discovery. A selected bibliography accompanies the chapters. Very good, instructive photographs are provided by Cumberland (No. 13,14,15) in his little pictorial volumes.

Many of the shorter articles describe both islands, but most of them only the South Island, in a slightly romantic lightx, as indicated by the titles themselves (No. 16, 19). A very important contribution was made by Alan Mulgan (No.22) in an article that contains a wealth of material and which, despitex its preeminently philological nature deserves attention also from the geographer. In

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many instances it takes the vision of a poet to fit a landscape into its broader setting. Mulgan cites several examples of ways of regarding New Zealand and instances of how different writers react differently to the same landscape. Unfortunately this article is lacking in precise literary references, and it has no bibliography. Worth noting are his critical remarks concerning connections with geography. A general view concerning the

Page 274: possibilities for geographic study at the universities, where chairs of geography were established recently, can be obtained from the article by Cumberland (No.23).

1 b) INDIVIDUAL PARTS OF THE ISLANDS, GEOGRAPHIC STUDIES

26. King, L.G.: The Relation between the Major Islands of New Zealand. (RSNZ, Trans. and Proc., 68, 1939, pp. 566-68, Bibl., Maps.)

27. Cumberland, K.B.: Canterbury Landscapes. A Study in New Zealand Geography. (GRev. 30, 1940, pp. 19-40, Pict.)

28. Pascoe, J.: Canterbury High Country. The Sheep and Sheepmen in the Mountains. (NZG 1, 1945, pp. 19-39, Pict.)

29. Jobberns, G.: The Marlborough Coast Route of the South Island Main Trunk Railway. (NZG 2, 1946, pp. 235-46, 7 Photos, 1 Map.)

30. Clark, A.H.: South Island, New Zealand, and Prince Edwards Island, Canada: A Study of "Insularity." (NZG 3, 1947, pp.137-50.)

31. Garnier, B.J.: The Face of Otago. Dunedin 1948. 86 pp., 26 Pict., Otago Centenary Publication.

32. Fox, J.W., and R.G.Lister: The Galatea-Basin: A Geographic Reconnaissance. (NZG 5, 1949, pp. 19-46, Pict.)

33. McCatskill, M.: The Coromandel Peninsula and the Thames Valley. (NZG 5, 1949, pp. 47-71, 8 Fig.)

34. Jobberns, G.: The South Island (NZ) High Country. (Rept.27, Meeting Austr. and NZ Ass. Hobart 1949, pp. 154-60.)

35. Fox, J.W.: Te Kuiti and the Northern King Country. A Region of Agricultural Transition. (NZG 6, 1950, pp. 125-53.)

36. Cumberland, K.B., and L. Pownall: The North-Coromandel Region. (In: Geographic Regions of New Zealand, Post Primary School, Bull.4,No.4, 95 pp., Maps.)

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37. Rose, A.J.: Takaka Valley, Northwest Nelson. (NZG 6, 1950, pp.154-70.)

38. Harrison-Smith: The Far North. (NZG, Record Publ. No.3, 1951, pp. 15 ff.)

38a. Roche, Violet A.: Mount Cook and the Mackenzie Country (New Zealand). (Walkabout, Melbourne, 7, 1940/41, No. 3, pp. 29-34.)

38b. --: Coastline of Romance. (Walkabout, Melbourne,6,1940. J.8.,pp. 33-35.)

38c. --: Glacier Land. In New Zealand Southern Alps. (Walkabout, Melbourne, 6, 1940, No. 9, pp. 29-32.)

38d. --: Otago - New Zealand's Southern Province. (Walkabout,Melbourne,6, 1940, No. 9, pp. 42-45.)

39. Falla, R.A.: The Outlying Islands of New Zealand. (NZG4, 1948, pp. 27-54, 1 Map.)

40. Redwood, R.: Chatham Island. (Walkabout, Sydney, 14,1947,pp.35-37.)

41. Falla, R.A.: The Chatham Islands. (NZG 6, 1950, pp. 1-12.)

42. Jacquier, H.: Acaroa, un coin oublié de France aux Antipodes (Acaroa, a Forgotten Corner of France in the Antipodes. (B.Soc.desOcéanistes, Paris, 8, 1951, pp.247-50.)

43. Magee, B.: A Turbulent Island (White Island). (Walkabout,Sydney,18, 1952, p. 44 ff.)

43a. Redwood, R.: Around the Mutton-Bird Islands. (Walkabout, Melbourne, 6, 1939, No. 3, pp.34-36.)

A comparison of the position and importance of the two main islands is carried through by King (No.26). All of the other studies deal only with parts of the islands, especially the South Island. Like the article by Cumberland (No.27), they are in many instances accompanied by good photographs. Basing his work on excellently interpreted air photos, Cumberland cites the divisions of the Canterbury area, while Pascoe (No.28) treated only of the mountainous portions of the land, putting emphasis on an account of the hardships of the life of the sheepmen. One of the coastal sectors was studied by Jobberns (No.29), making the railroad line merely an occasion for describing the outer limits of the area. Clark (No.30) draws an interesting comparison between Prince Edward Island, off Canada, and New Zealand. He reaches the conclusion that Prince Edward Island, though located so near Cana-

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da, is in reality more of an isolated country than New Zealand. A most excellent block diagram is supplied with the Otago Memorial Volume by Garnier (No.31), who is one of the most outstanding geographers of New Zealand. Six collaborators, among them D.H.Cotton, who treats of the Physiography, convey a general geographic view of the Province. McCaskill (No.33) reports on Coromandel Peninsula, a region noted for its gold and ore mines and its wealth of timber, while Fox (No.35) bases his study of the landscape on the meeting of Maoris and white settlers. He devotes special attention to the types of settlement. Cumberland (No.36), who has had an important share in stimulating geographic, chiefly culture-geographical, investigations of New Zealand, provides, jointly with Pownall, a scheme of geographic divisions, with special emphasis on the morphology and the economic factors. The very detailed study by Rose (No.37) gives his investigation of one single valley which, because of its coal deposits, is rather closely settled. The main settlement there is studied from a great many different points of view. Rose pays attention also to the functional organization of the trades. Roche (38a-38d) has made a number of contributions on the subject of the South Island, giving detailed attention not only to the topography, but especially also to the process of settling the western side of the Island, between Port Nelson and Hohitika. Some space is devoted to the gold rush. The description of the glaciers is designed more for the requirements of the tourist(38c). Falla (No.39) describes the islands located on a submerged flat southeast of the South Island. The inhabited Chatham Islands, 146 nautical miles from Littleton, are described in two studies, by Redwood (No.40) and by Falla (No.41), the latter being the more important.

2. TRAVEL REPORTS

44. Spoerri, M.: Streifzüge durch Neuseelands Berge (Roving Expeditions through the Mountains of New Zealand. (Die Alpen.Bern, XIV,1938, pp. 135-48, 4 Plates.)

45. Pascoe, J.: Unclimbed New Zealand. Alpine Travel in the Canterbury and Westland Ranges, Southern Alps. 238 pp. Pict. London 1939;2ndEd. 1950.

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46. Browne, A.C.: To the Summit of Tasman from the Westcoast. (GJ 99,1942, pp. 196-201, 4 Pict.)

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47. Holloway, J.T.: The Lesser Known Ranges of the Otago Alps. (Alpine J., London, 54, 1943, pp. 44-51.)

48. Greig, R.D.: Taraima Story. (Publ. in Commemoration of the Silver Jubilee of the Taraima Tramping Club. Wellington 1948. 108 pp.)

49. Pascoe, J.: The Mountains, the Bush and the Sea. A Photographic Report. Christchurch 1950. 96 Plates.

50. --: The Southern Alps: From the Kaikuras to the Rangitata. Christchurch 1951. 96 pp., Maps, Pict. (NZ Holyday Guide No. 3.)

51. --: The Rangitata Valley. (Rec.NZG.Soc.No. 8, 1948, p.6 ff.)

52. Cottrell, V.D.: New Zealand: Thermal Wonderland. (Walkabout, Sydney, 18, 1952, pp.34-37.)

52a. Scanlan, N.M.: Marlborough Sound. New Zealands Cinderella. (Walkabout, Melbourne, 15, 1939/40, No. 9, 17-20.)

The books that contain a general account of New Zealand deal chiefly with the mountain regions. Spoerri (No.44) gives a thrilling account; but Pascoe (No.45;49;50) has the capability of describing the mountains verbally and in pictures. A large number of sound geographic comments can be found inserted; and the topography, above all, is treated in detail.

3. HISTORY OF DISCOVERY, AND HISTORICAL GEOGRAPHY

53. Monnypenny, K.: From Whaling to Sheep Run: Beginnings in New Zealand, (Colonial Adventure and Achievement). London 1938. XII, 108 pp., Maps, Pict.

54. Beaglehole, J.C.: The Discovery of New Zealand. (NZ Centenary Survey 2, Wellington, Dept. of Internal Affairs, 1939. XVIII, 160 pp.)

55. Harper, A.P.: Old Days in New Zealand. (GMag.11,1940,pp.280-94,Pict.)

56. Beaglehole, J.C.: Abel Janszoon Tasman and the Discovery of New Zealand. 1942.

58. Mulgan, A.E.: New Zealand: Country and People, with an Historical Outline contributed by A.E. Mulgan, etc. 1943.

58. --: From Track to History. A Short History of New Zealand. Christchurch 1944. 127 pp.

59. Reed, A.H.: The Story of New Zealand. 2nd Ed. Wellington 1946.

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60. Reed, A.H.: The Story of Otago. Age of Adventure, to which is appended: A Journey through Otago in 1872, by Anthony Trollope. Wellington 1947. 367 pp., Pict.

61. Beaglehole, J.C.: The Exploration of the Pacific. 2nd Ed. The Pioneer Histories. London 1947. XV, 410 pp.

62. Cumberland, K.B.: Astearoa Maori, New Zealand about 1750. (GRev. 39, 1949, pp. 401-24.)

63. --: A Land Despoiled: New Zealand about 1838. (NZG 6, 1950, pp.13-34.)

64. Wright, O.: New Zealand 1826-1827. From the French of Dumont d'Urville. An English translation of the Voyage de l'Astrolabe (in New Zealand Waters). Wellington 1951, XII, 252 pp.

65. McClymont, W.C.: The Exploration of New Zealand. Wellington 1948, Dept. Internal Affairs. XVI, 202 pp., Maps, Pict. (NZ Centennial Surveys.)

66. Niland, D.: Aerial Pioneers. (Walkabout, Sydney, 17,1951,No.5,pp.33-37.)

67. Bolithoh, H.: Early Travelers in New Zealand. (GMag.24,1952, pp.527-32, 589-96, Pict.)

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68. Reed, A.H. and A.W. (Editors): Captain Cook in New Zealand. Journals of Captain Cook. Wellington o. J.

69. Cumberland, K.B.: The Status of Topographic Mapping in New Zealand. (GRev. 36, 1946, p. 135 ff.)

70. Gentilli, J.: Mapping New Zealand's Agriculture. (GJ London 104, 1949, p. 146.)

The fact that Europeans happened just at the time to recall their settlement of the Islands, at that time only a hundred years old, resulted in the contribution of quite a number of studies to the centenary celebration. Even at that it is not possible, however, to form from the literature an uninterrupted picture of the course of historical events. One of the most important presentations, based on careful source study especially with respect to the Maori period, was prepared by Beaglehole (No. 54), at the direction of the Ministry of the Interior. Harper (No.55) shows more of a tendency to place emphasis on the progress of settlement, and Cumberland (No.62) develops a picture of New Zealand such as it was

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during the time around 1750. In his chorological account of the country's development from a whaling station (No.63) to its first European settlement he exhibits a capacity for highly vivid description of the old-time conditions. An analogous account is to be found in an attractive book written for the schools by Kathleen Monnypenny (No.53). McClymont (No. 65) stresses particular the share of the aboriginal population in the "discovery" of the country. At the same time he also deals quite in detail with first exploration of the Islands by prospectors and geologists. He treats the various individual landscapes in great detail. Captain Cook and the Frenchman Dumont d'Urville, the two famous world travelers, have both visited New Zealand. Their travel notes have been republished, and a detailed account of their observations has been supplied (No.65;67;68). In reply to a survey by Platt in Geographic Review, New York, Cumberland (No.69) made a valuable contribution to our knowledge of the topography. His remarks indicate that topographical study of the country was pursued with the most modern means, and that a map 1:63,330 is now available, comprising 169 sheets for the North Island and 191 sheets for the South Island. All of these 360 sheets were prepared from topographical air photos. They are of good quality, but still in a rather unfinished condition. Inaccuracies are being eliminated by currently supplied corrections. The important fact for the geographer, presumably, is that we now have a complete set of maps available that will permit studies dealing with any and all parts of the country.

4. GEOLOGY AND MORPHOLOGY

a) GEOPHYSICAL COMMENT

71. Modrzniak, N., and E. Marsden: Experiments in Geophysical Survey in New Zealand. (NZ Geol. Mem. No.4, Wellington 1938, 92 pp., 30 Maps.)

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72. Gage, M., and I. McNeill: Geophysical Investigations in the Area between Wainta and Merrijigs. (NZJScTechn.22, 1940, pp.155-65.)

73. Hayes, R.C.: The Seismicity of New Zealand. (NZJScTechn.23,1941,pp.49-52, Maps.)

74. --: Earthquake Origin in the New Zealand Region. (NZJScTechn.22,1941) pp. 225-30.

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75. Ongley, M.: Wairarapa Earthquake of 24th June 1942, together with Map Showing Surface Traces of Faults Recently Active.(NZJScTechn.25,1943, p. 67 ff.)

76. Fleming, C.A.: Earthquake Traces near Waverley and their Tectonic Setting. (RSNZDunedin, Rept.6th,Session 1947, pp. 273-83.)

77. Hayes, R.C.: Earthquake in New Zealand during the Year 1947. (NZJScTechn. 30, 1948, pp. 102-05.)

b) VOLCANISM

78. Bartrum, J.A.: Unusual Weathering of Basalt and other Volcanic Phenomena at Edendale, Auckland. (NZJScTechn. 2, 1941, pp. 205-09, Pict.)

78a. Speight, R.: The Basal Beds of the Akaron Volcanoes. (TrRSNZWellington 70, 1940, pp.60-76.)

79. Benson, W.N.: The Basic Igneous Rocks of Eastern Otago and their Tectonic Environment. Part 3. (RSNZTrProc. 72, 1942, p.160-78.)

80. Modriniak, N.:Thermal Resources of Rotorua. (NZJScTechn.26,1944, pp. 277-89.)

81. Fleming, C.A.: Hydrothermal Activity at Ngawha, North Auckland. (NZJSc. Techn.26,1944,pp.255-76.)

82. Cotton, C.A.: Volcanoes as Landscape Forms. Wellington 1944.416 pp., 223 Fig.

83. ---: Volcanoes as Landscape Forms. (AmAssPetrGeolTulsa 29,1945,pp.1046-48.)

84. ---: Some Volcanic Landforms in New Zealand. (JGeomorph.,New York, IV, 1941, pp. 297-307.)

85. McPherson, E.O.: The Puia Hot Springs. (NZJScTechn.26,1945,pp.244-54.)

86. Oliver, R.L.: Further Activity of Mount Ruapehu, May-July 1945. (NZJSc. Techn.27,1945,pp.24-32.)

87. Activity at Ruapehu March-April 1945. (NZJScTechn.27,1945,pp.17-23.)

88. McPherson,E.D.: An Outline of Late Cretaceous and Tertiary Diatrophism in New Zealand. (NZDept.Sc. and Industr. Res., Geology No.6,1946,32pp.)

89. Schoffield,J.C.: Distribution of Lower Oligocene Volcanoes in New Zealand. (NZJScTechn.13, 1951/52, pp.201-07.)

c) GENERAL GEOLOGICAL AND MORPHOLOGICAL INVESTIGATIONS

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90. Crustal Structure of New Zealand. (Nat.147,1941,p.685 ff.)

91. Cotton, C.A.: Geomorphic Provinces in New Zealand.(NZG 1,1945,pp.40-47.)

92. The Outline of the Geology of New Zealand (to accompany the 16 inch to 1 mile Geological Map).By Officers of the Geological Survey,Wellington 1948.

93. Fleming, C.A.: The Geological History of New Zealand with Reference to the Origin and History of the Fauna and Flora. (Tuatura 1,1949,2,pp.72-90.)

94. Lillie, A.R.: Note on the Geological Structure of New Zealand.(RSNZTrProc. 79, 1951, pp. 218-59.)

94a. Marwick, J., and H.J.Finlay: The Divisions of the Tertiary of NewZealand. (Pr.Sixth Pac.Sc.Congr.,Berkeley and San Francisco 1939,LosAngeles 1940, Vol.II,pp.503-22.)

d) SPECIAL AND REGIONAL INVESTIGATIONS

95. Grange,L.I.: The Geology of the Rotorua and Kaimanawa Division. (Geol. Survey of NewZealand,B No.37,1937,138pp.,20 Maps, 11 Fig., 11 Tables.)

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96. Ongley, M.: The Geology of the Kaitagata-Green Island Subdivisions,Eastern and Central Otago Divisions. (Geol. Survey of NewZealand,B No.38,N.S., Wellington 1939. 90 pp., 5 Fig., 8 Maps, 5 Plates.)

97. Cotton, C.A.: Some Peneplanation in Otago,Canterbury, and the North Island of NewZealand. (NZJScTechn. 20,1938, pp.1-8.)

98. --: Lateral Planation in NewZealand. (NZJScTechn.20,1938,pp.227-32.)

99. Marwick, J.: The Geology of North Otago and South Canterbury. Wellington 1946,Dept. of Education School Publ. Branch. 31 pp.

100. Raeside, J.D.: The Origin of Schist Tors in Central Otago. (NZG 5,1949, pp.72-76, 3 Pict.)

101. Ward, W.T.: The Tors of Central Otago. (NZJScTechn.33,1951,pp.191-200.)

102. Williamson, J.H.: The Geology of the Naseby Subdivisions Central Otago. (Geol.Survey of New Zealand, B No. 39. 141 pp., 23 Tables.)

103. Wellman,H.W.: Geological and Geophysical Survey, Colb Valley Nelson. (NZJScTechn.2,1940,pp.52-60.)

104. Gage, M.: The Makara and Karori Valleys and theirBearings upon the Physiographic History of Wellington. (RSNZTrProc.69,1940,pp.401-09.)

105. Benson,W.N., and I.T.Holloway: Notes on the Geography and Rocks of the Ran-

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ges between the Pyke and Matukituhi Rivers, N.W Otago. (RSNZTrProc. 70, 1940, pp. 1-24.)

106. --: Landslides and Allied Features in the Dunedin Districts in Relation to Geological Structure, Topography and Engineering. (RSNZTrProc. 1940/41, pp. 249-63.)

107. Mason, B.H.: The Geology of Mount Grey District, North Canterbury. (RSNZ TrProc. 71, 1942, pp. 103-27.)

108. --: The Geology of Mandemas Pheres District, NewZealand. (RSNZTrProc. 72, 1942, pp. 403-28.)

109. Cotton, C.A.: Notes on Two Travers-Profile Geomorphic Problems. (RSNZTr. Proc., 71, 1941, pp. 105.)

110. Wellman, H.W.: Geology of Coal Creek. (NZJScTechn. 27, 1945, pp. 8-14.)

111. Adams, G.J.: Upland Terraces in Southern NewZealand (JGeol., New York (?) 53, 1945, pp. 289-312.)

112. Cotton, C.A.: The Alpine Fault of the South Island of NewZealand from the Air. (RSNZTrProc. 76, 1947, pp. 369-71, Pict.)

113. Adkin, G.L.: The Tararua Range as a Unit of the Geological Structure of New Zealand. (RSNZ, Dunedin, Rept. 6th Sc. Congress, Mag. 20, 3, 1947, pp. 260-72.)

114. McPherson, E.D.: The Otaihanga Faulted Outlier and Notes on the Greensand Deposits. (NZJScTechn. 30, 1948, pp. 70-83.)

115. Coombs, D.S.: The Geology of the Northern Tarringatura Hill, Southland. (RSNZTrProc. 78, 1950, pp. 426-48.)

116. Lillie, A.R.: Two New Zealand Rivers following Tertiary Transverse Furrows. (RSNZTRProc. 78, 1950, pp. 329-40.)

117. Cotton, C.A.: Une côte de déformation transverse à Wellington (A Transversal Deformation Coast at Wellington (New Zealand). (Rev. Géomorph. Dynamique, Paris, 2, 1941, pp. 97-109.)

118. --: Fault Valleys and Shutter Ridges at Wellington. (NZG 7, 1951, pp. 62-68.)

119. --: Post-Hokonu Orogeny, Erosion and Planation. (NZJScTechn. 33, 1951.)

120. Munden, J.W.: Notes on the Alpine Fault, Haupiri Valley. (NZJScTechn. 33, 1952, pp. 404-08.)

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121: Wellman, H.W.: The Alpine Fault in Detail: River Terrace Deplacement at Marmia River. (NZJScTechn.33,1952,pp.409-14.)

121a. King,L.C.: Late Pliocene and Pleistocene Tectonic Movements in the Central Regions of New Zealand. (Pr.Sixt Pac.Sc.Congr.,Berkeley and San Francisco 1939, Los Angeles 1940, Vol.II,pp.815-23.)

121b. Speight,R.: The Geology of Banks Peninsula. A Revision. (TrRSocNZ,Wellington, 73, 1943, pp.13-26.)

122. Waitomo Caves, NewZealand, and the World-Famous Glow-Worm Grotto. Wellington 1939.

123. Henderson,J.: Petroleum in New Zealand. (NZJScTechn.19,1937,pp.401-26.)

124: --: The Copper Resources of New Zealand. (NZJScTechn.20,1939,pp.177-81.)

125: Mason,B.: The Utilisation of NewZealand Iron Sands as a Source of Iron, Titanium and Vanadium. (NZJSrTechn.26, 1944/45, pp.227-38.)

126: Pascoe, J.: Coal from the Buller. (NZG 4,1948,pp.163-69.)

e) COASTAL AREAS AND ISLANDS

127: Healy,J.: The Geology of the Coastal Strip from Big Bay to Professor Creek, North-West Otago. (NZJScTechn.20,1938,pp.80-94.)

128: Cotton,C.A.: Plunging Cliffs, Lyttelton Harbour. (NZG 5,1949,pp.130-36.)

129: Gill,E.D.: Some Unusual Shore Platforms near Gisborney, North Island, New Zealand. (RSNZTrProc.78,1940,pp.64-68, Pict.)

130: Speight, R.: An Eroded Coast Line. (RSNZTrProc. 78,1950,pp.3-13,Pict.)

131: Fleming, C.A.: The Geology of Mokokinan Island,North Auckland.(RSNZTr. Proc. 78, 1950, pp.255-68.)

132. Fleming,C.A., and J.J.Reed: Mernoo Bank, East of Canterbury,NewZealand. (NZJScTechn.32,1951,pp.17-30.)

133. Cotton,C.A.: Seacliffs of Banks Peninsula and Wellington. Some Criteria for Coastal Classification (Part I). (NZG 7,1951,pp.103-20,11 Pict.)

134. --: Accidents and Interruptions in the Cycle of Marine Erosion. (GJ 107, 1951, pp. 343-49.)

135. --: The Wellington Coast. An Essay in Coastal Classification. (NZG 8,1952,pp. 48 to 62.)

f) GLACIAL GEOLOGY AND MORPHOLOGY

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136. Willett, R.W.: A Glacial Valley, Mount Aurum Skipper's Creek Survey District. (NZJScTechn.21,1939,pp.105-12.)

137. Cotton, C.A.: Glacial Spur-Truncation in New Zealand. (J. of Geomorph.,New York, 1939,pp.70-72, 3 Fig.)

138. Speight,R.: Some Aspects of Glaciation in New Zealand. (Rep.Austr. and NZ Ass.Adv.Sc., Canberra, 1939, pp. 49-71.)

139. --: The Rangitata Glacier: The Question of its Maximum Extension. (RSNZTr. Proc.71,1941,pp.169-80.)

140: --: Note on the Franz Josef Glacier. (RSNZTrProc.71,1941,pp.128-33.)

141. --: Ice Wasting and Glacier Retreat in New Zealand. (J.ofGeomorph.,New York,3, 1940, pp.131-43.)

142. --: A Detail of the Pakahi Moraine. (RSNZTrProc.72,1942,pp.199-219.)

143. Wellmann, H.W., and R.W.Willett: The Geology of the West Coast from Abut Heal to Milford Sound,Part 2,Glaciation. (RSNZTrProc.72,1942,pp.199-219.)

144. Cotton,C.A.: Basal Remnants of Truncated Spurs in Glaciated Troughs. (J.of Geomorph., New York,4,1941,pp.65-70.)

145. Suggate,R.R.:Franz Josef and other Glaciers of the Southern Alps, New Zealand. (J. of Glaciology, London, 1, 1950, pp.422-28.)

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146. Franz Josef Glacier, March 1951. (NZJScTechn.33,1952,pp.297-304.)

147. Gage,M.: Thawing of the Camron Glacier, Arrowsmith Range, Canterbury. (NZJScTechn.33,1951/52,pp.138-41.)

148. --: The Dwindling Glaciers of the Upper Rakara Valley, Canterbury, New Zealand. (J. of Glaciology, London,2, 1951, pp.504-07.)

149. --: The Carneron Glacier, New Zealand. (J.of Glaciology,London,1,1951,p.582.

150. Harrington, H.J.: Glacier Wasting and Retreat in the Southern Alps of New Zealand. (J. of Glaciology, London, 2, 1952, p. 12.)

g) HYDROLOGY

151. Bartrum, J.A.: Peculiarities of Drainage Evolution near Auckland, New Zealand. (NZJScTechn. 21, 1939, pp.143-56.)

152. Henderson, J.: Underground Water in New Zealand. (NZJScTechn.23,1941, pp. 97-112.)

153. Benson, W.N.: Notes on the Suspended Loads of the Waimakariri River. (NZJSc. Techn.27,1946,pp.420-26.)

154. Hall,W.E.: Water Supply for Coastal Area between Foxton and Lewin. (NZJSc. Techn.27,1946,pp.431-34.)

155. Adkin,G.L.: On the Occurrences of Natural Artesian Springs in the Hirowhenna District. (NZJScTechn.29,1948,pp.266-72.)

156. Cage, M.: Stream Patterns in the Greymouth District. (RSNZTrProc.78,1950, pp.418-25.)

157. Schnackenberg,L.C.: Extreme Flood Discharges. (NZ Inst.Eng.J.,Wellington, 1949, pp. 376-427.)

h) SOIL EROSION

158. Dixon,J.K.: Soluble Salts in New Zealand Soils. (NZJScTechn.19,1938,pp. 691-96.)

159. Zotov, V.D.: Certain Types of Soil Erosion and Resultant Relief Features on the High Mountains of New Zealand. (NZJScTechn.21,1940,pp.256-62.)

160. Cumberland,K.B.: Soil Erosion in New Zealand. A Geographical Reconnaissance. Wellington Soil Conservation and Rivers Control Council. Wellington 1944. 227 pp.,Bibl.,Maps,Pict.,Index.- Ref.:GRev.36, 171f.

161. --: Contrasting Regional Morphology of Soil Erosion in New Zealand. (GRev.34, 1944,pp.77-95.)

162. --: A Geographic Approach to Soil Erosion in New Zealand. (Austr.Geogr., Melbourne,4,1943,pp.120-31.)

163. Campbell, D.A.: Soil-Conservation Studies Applied to Farmingin Hawkes-Bay, Part I: Investigations into Run-Off and Soil Loss. (NZJScTechn. Wellington, Sect.A,26,1944,pp.301-22.)

164. Gibbs, H.S., and J.D. Raeside: Soil Erosion in the High Country of the South Island. (NZ Dept. of Sc. and Industr.Res.Bull.No.92; Soil Survey Public. No. 10. Wellington 1945, 72 pp., Maps.)

165. Grange,L.I.: North Island Soils. (NZJ.ofAgricult.,70,1945,pp.387-97.)

166. Holmes,J.M.: Soil Erosion in Australia and New Zealand. Sydney 1946. 296 pp.,Maps,Diagr.,Pict. - Ref.: GJ 108, 1946,182.)

167. Campbell, D.A.: Down to the Sea in Slips. (NZ Soil Conservation and Rivers Control Council, B. No.5, Wellington 1946. 25 pp.)

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168: Campbell, D.A.: Soil Erosion and Conservation Problems in New Zealand. London 1946.

169: Raeside, J.D.: The Origin of Salt Pans in Central Otago. (NZJSc Techn. 30, 1948, pp. 96-101.)

170: Grant, A.P.: Soil Conservation in New Zealand. (NZ Proc. Eng., Wellington, 1950, pp. 269-313.)

(a) The large number of studies that have appeared during the few years that have passed since the last Report (1938) indicate clearly that an effort is being made to further knowledge of the two Islands. So far as geophysical investigations are concerned, both Islands, but especially the North Island, have long since been used as a testing ground. All the investigations made so far can be found briefly recorded in a capably prepared study by Modriniak and Marsden (No. 71); while Gage (72) confines himself more or less to one subject. Hayes (No. 73) subdivides the two Islands into four seismic areas, on the basis of "maximum intensity and medium frequency." Ongley (No. 75) deals with the visible surface results, such as cracks and faults noted after the Wairarapa earthquake. Fleming (No. 76) reports on similar types of phenomena in the Waverley area.

(b) Volcanic eruptions, notably the forms of weathering of the volcanoes, are known from widely scattered parts of the country. Bartum (No. 78) and Benson (No. 79) have investigated the forms of weathering. Possible ways of utilizing the volcanic forces are considered by Modriniak (No. 80). More detailed than the others, and highly valuable, are the investigations conducted by C.A. Cotton (No. 82-84), whose author has endeavord to find solutions for various morphological problems presented by a large number of regions in different parts of the South Island. His articles, and also his detailed work on volcanoes as forms of the landscape (No. 83), are valuable contributions to the general morphology of this type of mountain formation. Valuable supplements to these studies are supplied by the work of McPherson (No. 88) and Schoffield (No. 89). Schoffield makes use of a sketch map to indicate where volcanoes where active during the Lower-Oligocene. He demarcates two lines, on the eastern and on the western side of the Southern Alps. It is especially worth noting that at the time of their activity these volcanoes were of the submarine type. A

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good general account of the activity and the geology of the volcanoes is supplied by Oliver (No.86), in his report on the activity of Mount Ruapehu.

(c) A good topographical and morphological discussion is contained in all of the above-mentioned and, especially, the below-mentioned studies, although in many instances they deal with purely geological problems. Cotton has made an essential contribution also to the more general type of studies dealing with the country's geology. It was he who contributed the division of the two Islands into eleven distinct morphological provinces, where the subdivisions for the North Island are more numerous than those of the South Island (No.91). A general view of the geology is furnished by the accompanying text of the geological maps of

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the Survey (No.92.).

(d) There are about 70 studies available that treat of various individual parts of the country and thus supplement those contributions which only serve to bring out the more general traits. Special attention is deserved by those articles which contribute information concerning Otago, since in that area, as Ward (No.101) has pointed out, peneplanation occurred on two different occasions: once during the Cretaceous period, and then again during the Tertiary. The "tors" that loom up there nowadays above the erosion surface have been investigated repeatedly. Several authors have developed theories to account for their existence of those "tors." Raeside (No.100), jointly with Cotton (No.98), assumes that erosion by the winds acted upon these mesoschists to elaborate residual knows. The vicinity of Wellington was studied by Gage (No.104) and the vicinity of Dunedin by Benson (No.105). There are several studies dealing with the economic aspects of geology, and these reports on deposits of coal and copper. Most of these studies are accompanied by good photographs, and many of them even have well-interpreted air photos. This fact stands out clearly in the studies on coastal geology, a subject which, in view of the highly developed shapes of the coasts of New Zealand, has received particular attention.

The faults are in many instances outstanding landmarks, and have for that reason been given detailed treatment in many instances. Cotton

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(No.112) interprets air photos of such faults on the New Zealand Alps. He also describes faults in the Wellington area (No.118), in connection with another study (No.117) that deals with coastal formations. Munden (No. 120) and Wellman (No.121) have published studies covering the same territory.

(e) The coast of Otago exhibits a great variety of forms, which have been studied by Healy (No.127), who also discovered traces of glaciation there. Cotton (No.128), who has brought out several studies on individual sections of the coast of the South Island, has summarized his individual investigations, which exhibit a strong morphological bias, in a critique of the classification of coastal types (No.133,134). Since extensive upthrusts and depressions have occurred in the territories of the South Island, there developed in many instances littoral platforms, which were studied by Gill (No.129) in the Gisborney area and by Flemings (No.132) with regard to the at present submerged areas off the South Island, at the Mernoo-Banks. The difficulties encountered in determining the divisions of the Ternary were discussed by Marwick and Finlay (94a) in their report to the Pacific Congress. Their work affords a complete general view, and also attempts a coordination with the European divisions. This work is completed by the addition of a systematic Stratigraphy, comparisons of the macro-fauna and micro-fauna. A supplementary contribution was contributed by King (121a), who

presents in brief form his reasons for assuming (the existence of) a former connecting link between the North Island and the South Island, and also discusses the tectonics. Unfortunately he does not give any precise chronological data, though he allows the experiment to speak for itself. Speight (No.121b), finally, arrives, on the basis of the most recent knowledge available, at a detailed revision of the geological conceptions, more and more in the direction of the tectonics of the Banks Peninsula, which he discussed in his first effort as long ago as 1917.

(f) The South Island, in its Southern Alps, exhibits a large amount of glaciation, which during the Pleistocene covered large portions of the land and, in some instances reached down as far as the coast. In view of the increased effort made in recent years to determine the country's geology and morphology it was hardly possible to disregard these glaciation phenomena. Here again it was Cotton who (No.137), by way of supplementing Speight's fear-

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lier studies, reported on the part played by ice in forming the landscape. In New Zealand, too, a tendency to retreat can be noted on nearly all of the glaciers. Their dimensions are discussed by Speight (No.139), Gage (No.147), and Harrington (No.150). There have been many special investigations of individual glacier territories, chiefly the Franz-Josef Glacier, presumably due to its ready accessibility (No. 140;145; and 146).

(g) The supply of utility waters in New Zealand has not so far been a source of many difficulties, and consequently there have up to this time been only few investigations dealing with that matter. The subject of hydrography itself, however, has received a greater amount of attention, since hydrographic developments are, of course, intimately connected with the geological development during the various individual periods. Reports on this subject have been contributed by Bartrum (No.151) and by Benson (No.153).

(h) Such questions as the conduction of water and silting receive a certain amount of attention also in the studies dealing with the destruction of soil; and literature on this particular subject has been forthcoming in increasing quantities during recent years. The ruthless exploitation of the soil that was initiated since the beginnings of settlement by Europeans has produced extremely pernicious effects. The worst of these consequences was that the surface soil, after it had been laid bare by burning the grass,was subsequently destroyed still further by wind erosion and intensive pasturing of cattle, thus causing untold damage to agriculture. In many instances the landscape absolutely was converted into a desert. Now that the damage caused has taken on frightening proportions there are efforts being made to take counter-measures. Special committees were appointed, and the Government took a hand. Bulletins (No.164), and also private individuals, report on the danger. Holmes (No.166) has contributed a comprehensive survey dealing with Australia and New Zealand; and Cumberland (No.160;162) made use of air photos in determining the extent of such destruction of the soil

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and reporting changes exhibited by the landscape. Zotov (No.159) reported on the damage caused to land in the elevated parts of the country. Raeside describes (No.169) a number of salinebasins on Otago territory, and the process of their form-

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brief
ation; and reports on current improvements in a number of different articles (No.168;170).

(5) CLIMATOLOGY

171. Dacre, J.C.: Climatology and Meteorology of the New Zealand Area. A Bibliography. (NZG 3, 1947, pp.129-36.)

172. Garnier, B.J.: The Climates of New Zealand according to Thornthwaite's Classification. (AnnAssAmG., Lancaster, 36, 1946, pp. 151-73.)

173. --: (Editor): New Zealand Weather and Climate. Auckland 1950. 154pp.,Pict. (The NZ Geogr.S., Dunedin, Misc.,Per.No.1.)-Ref.:ScottGMag.67,1951,199.

174. Kidson,E.: Climatic Notes: New Zealand Districts. Wellington Met.Office, Note 17, 32 pp.

175. Climates of the World: Australia and New Zealand. (Weather, London,7,1952, pp.279-82.)

176. Willett, R.W.: The New Zealand Pleistocene Snow Line, Climatic Conditions and Suggested Biological Effects. (NZJScTechn.32,1950,pp.18-43,Maps.)

177. Raeside, J.D.: Some Post-Glacial Climatic Changes in Canterbury and their Effect on Soil Formation. (RSNZTrProc.77,1948,pp.153-72.)

178. Watts, J.I.M.: Forecasting New Zealand Weather. (NZG 2, 1945, pp.119-38.)

179. --: The Relations of New Zealand Weather and Climate: An Analysis of the Westerlies. (NZG 3, 1947, pp.115-29.)

180. Seelye,C.J.: Tornadoes in New Zealand. (NZJScTechn.27,1945,pp.116-74.)

181. Hitching, M.G.: Campbell Island, a Sub-Antarctic Weather Station.(Weather, London,4,1949,pp.389-92.)

182. Bondy,F.: Droughts in New Zealand. (NZJScTechn.32,1950,pp.1-10.)

183. White's Aviation Ltd. New Zealand. Lenticular Leewave Cloud over New Zealand. (Met.Mag.,London, 81, 1952, p.57ff.)

184. Seelye,C.J.: Wellington City Rainfall. (NZJScTechn.,26,1944,pp.36-46.)

185. --: Fluctuations and Secular Trend of New Zealand Rainfall. (Met.Off., Wellington, No.36.)

186. --: The Frequency of Heavy Daily Rainfalls in New Zealand. (RSNZ,Rept. 6thSc.Congress, Wellington, 1947, pp.66-70.)

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187. Seelye, C.J.: Variations of Monthly Rainfall in New Zealand. (NZJScTechn. 27, 1946, pp.397-405.)

188. --: Variability of Annual Rainfall in New Zealand. (NZJScTechn.22, 1949, p.18 ff.)

189. Garnier, B.J.: The Application of the Concept of Potential Evapotranspiration to Moisture Problems in New Zealand.(NZG 7, 1951, pp.43-61.)

190. Bastings, L., and P.E. Simmons: Climatic Zone and Domestirc Heating in New Zealand. (NZJScTechn.32, 1951, pp.44-53.)

A short bibliographic survey of the most important among the climatological studies is furnished by a compilation published in the New Zealand Geographer (No.171) in 1947, which has since been supplemented by Garnier's study (No.173). It combines the results of studies that had ap-
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peared at an earlier time; and it contains chapters on the organization of the meteorological service, a history of the latter (by Robertson), and also Garnier's (No.172) Classification (publ.1946) of the Climate according to the Thornthwaite Classification. More important, however, is for the geographer a study like that of Garnier's, which investigates the climate of the various individual districts according to the seasons. Willetts (No.176) presents a map and a cross section to trace the lowering of the ice-period snow line. According to him the periglacial zone is likely to have covered th South Island in its entirety, and also the southern part of the North Island. The present vegetation and distribution of notophages are in his opinion closely connected with that problem. Watts (No.178), who is interested in weather prognostication, engages in a study of the winds. Nearly 40% of the winds all come in from the northeast. Seelye (No.180) has devoted a very competent study to the tornadoes. About nine tornadoes are reported annually; but the number actually occurring is apt to be larger. He discucses the various types, their occurrence, and their formation. Bondy (No.182) gives an account of the arid spells and locations and their periodicity, while Seelye (No.186-189) devotes a number of articles to the subject of precipitations. He notes (No.188) a decrease of precipitations in proportion to the latitude, and an

increase as one advances from west to east. A study of rather a more technical implication was brought out by Bastings (No.190), who jointly with Simmons ascertained the quantities of heating fuel required in each of the different climatic provinces.

(6) FLORA AND FAUNA.

191. Clark,A.H.: The Invasion of New Zealand by Peoples, Plants, and Animals. (The South Island.) New Brunswick 1949. XIV,465pp.,81 Pict.-Ref.:GJ 116,104.

192. Madden, E.A.: The Grasslands of the North Island of New Zealand. (Dept. of Sc. and Industr. Res. Bull. 79, Wellington 1940. 55 pp.)

193. Zotov,C.T.,et al.: An Outline of the Vegetation and Flora of the Tararua Mountains. (RSNZTrProc. 68, 1938, pp. 259-324.)

194. Walders, H.: Alpine Flowers of the Southern Alps of New Zealand. (Walkabout, Sydney, 15, 1949, pp.31-37.)

195. Walker, E.H.: New Zealand, a Botanist's Paradise. (Ann.Rep.Smithsonian Inst. 1949, pp.317-48.)

196. Poole,A.L.: Flora and Vegetation of the Caswell and George Sounds District. (RSNZTrProc. 79, 1951, pp.62-83.)

197. Post, L.v.: Pollendiagramme aus Neuseeland (Pollen Diagrams for New Zealand). Excerpts from a lecture. p. 219 Int.Ver.f.d.Stud.d.Quartärs INQUA. (Vh.III. Int.Qu.-Konf. Vienna 1936, Vienna 1938. 394 pp.)

198. Glinkard,L.: Le pin kauri en Nouvelle Zélande(The Kauri Pine in New Zealand). (Rev.Int. du Bois 1938,V. 400 pp., Pict. pp.208-10.)

199. Cockayne,L., and J.Ph. Turner: The Trees of New Zealand. Wellington 1943. 176 pp.,Pict.; New Ed. 1945.

200. Stebbing,E.P.: Forest in New Zealand. (Nat.149,1942,p.672 ff.)

201. --: Indigenous Forest of New Zealand. (Nat.156,1945,p.60.)

202. Champion, H.G.: The Kauri Tree in New Zealand.(Nat.163,1949, 238 ff.)

203. Tidmarsh,C.: The Utilization of Exotic Forest in New Zealand. (NZG 7, 1951, pp. 69-73.)

204. Hill, T.L.: New Zealand Forestry in Transition. (J. of Geol.,Chicago, 1951, pp. 265-76, Pict.)

205. Lewing, E.V.: A Century of Forest Life of New Zealand. (Nat. 145, 1940, 943.)

206. Fell, H.B.: The Fauna of New Zealand. (Nat. 147, 1941, p.253 ff.)

New Zealand's biological balance, such as it had developed in the course of the various geological periods as result of the country's isolated position, suffered its first disturbance through the Island's conquest by the Polynesians. Later on far more radical changes took place as result of settlement by the Europeans. Clark (No.191) provides information on this subject in his comprehensive and deeply penetrating study. He considers all of the questions involved from a historico-biological point of view. His work is supplemented by a critical bibliography that is very helpful in any effort to understand New Zealand. The open territories, which are of such great importance for the raising of herds of sheep, have been made the subject of a large number of special studies. In many instances they present the results of investigations ordered by the Ministry of National Economy; and in them the various problems are treated from the point of view of agriculture, i.e. an effort is made to determine in each case the economic values. A report on the Alpine Flora was given by Walders (No.194). The spread of the kauri pine and the rapid growth of needle-bearing timber has been treated in a number of studies. Cockayne (No.199) discusses all of the species of timber; and Stebbing (No.200,201) has provided two brief reports on the forests. In the matter of forests, too, there has been a definite change as compared with the earlier times. Hill (No.204) describes these new developments of forestry, a service that has come to aim exclusively at the maximum of utility and gives preference to exotic species of timber if these seem promising of quick profit. One among these species is the Monterey Pine. This study is of importance for the geographer since its author contributes a map showing the distribution of forested areas. The fauna has so far been reported on only in a study by Fell (No.206).

(7) SETTLEMENT AND POPULATION

207. Beaglehole, E.: Anthropology in New Zealand. (J.Polyn.S.Hawaii 47, 1938, pp.152-62.)

208. Donne, T.E.: Moeurs et coutumes des Maoris (Morals and Customs of the Maoris. Transl. from Eng. by M.Fain, Paris 1938, 298 pp. Maps, 25 Pict.

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209. Elliott: The Maoris. (GMag.10,1939,pp.47-56.)

210. Sutherland, I.L.G. (Editor): Maori People To-Day. London 1940, 449pp. (Pacific Relations Int.Res.Ser.)

211. Beaglehole, E.: Some Modern Maori. Wellington 1946. XXI, 347 pp. (New Zealand Council for Educational Research, Educ.Res.,Ser.No.25.)

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212. McEwen,I.M.: The Development of Maori Culture since the Advent of the Pukeha. (J.Polyn.S. Hawaii 56, 1947, pp.173-87.)

213. Mulgan,A.E.: The Maori in Picture. A Brief Survey of Maori Life past and Present. Ed. by A.E. Mulgan. Christchurch 1948. 71 pp.

214. Kelly, L.G.: Tainui: The Story of Hotoroa and his Descendants. Wellington, Polyn.Soc.,1949, 483 pp.

215. Rose, A.J.: The Maori in Northwest Nelson about 1840.(NZG 8,1952,63-68.)

216. Metge,J.: The Maori Population of Northern New Zealand. (NZG 8,1952, pp. 104-24, 4 Maps.)

217. Alley,R.: The Chinese in New Zealand.(China J.,Shanghai,23,1938,pp.70-79.)

218. Michel,E.: Emigrazione livornese nella Nuova Zelanda (Emigration from Livorno (Leghorn) to New Zealand.(B.Storico Livornese, Livorno,2,1938,395.)

219. Cowan,J.:Settlers and Pioneers. Wellington 1940. 153 pp., 10 Pict.

220. Sinclair,H.I.: Population: New Zealand Problem. Dunedin 1944,188 pp.

221. Rolleston, H.M.: More English than the English. New Zealand Victorians. (GMag.17, 1945,pp.459-509.)

222. Tocker, A.H.: Population Policy in New Zealand and Elsewhere: A Review of Objectives. (NZG 1, 1945, pp.139-48.)

223. Cumberland,K.B.: Population Changes in New Zealand. (GJ 108,1946,p.121ff.)

224. Calvert, G.N.: The Future Population of New Zealand, a Statistical Analysis. Wellington 1946. 162 pp.

225. --: New Zealand's Population Prospects. (NZG 3,1947,1-18, 5 Fig., Diagr.)

226. Meek,R.L.: Some Features of New Zealand's Racial Problems. (NZG 3, 1947, pp.75-82.)

227. Jacoby,E.G.: Rural Sociology in New Zealand.(RSNZRept. 6th Sc.Congr., 1947, pp. 236-40.)

228. Lewthwaite,G.: The Population of Aotearoa, its Number and Distribution. (NZG 6, 1950, pp.35-52.)

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229. Beaglehole, E.: Some Sociological Aspects of Race Relations in New Zealand. (Int. Sociol. Sc. Bull. 3, 1951, pp. 253-58.)

230. Murphy, R.C.: The Impact of Man upon Nature in New Zealand. (Proc.Am.Phil. S., Philadelphia, 95, 1951, pp. 569-82.)

231. --: Man and Nature in New Zealand. (NZG 8, 1952, pp. 1-14.)

A tendency to turn back to the country's own past history was quite noticeable in the writings on historical geography; and the same tendency is noticeable also in the evolution of relations with the country's primitive inhabitants. In the publications that deal with the Maoris and their customs or with the progress of settlement there is reference to historical problems as well as to the purely anthropogeographic questions. Many of the studies published do not get beyond the scope of a general account, however; and the problem of social adaptation of the Maoris is one of the favorite topics. Many of these natives are at present occupied as hired laborers; and it is important to raise their social level and to have these people take a part in solving the problems posed by the country's condition. Sutherland (No.210), therefore, makes a detailed appraisal of their social status; while Beaglehole (No. 211) merely concerns himself with the problem of incorporating them properly in the labor process. Changes in Maori civilization since the advent of the Europeans are dicussed by McIwen (No.212). Rose (No.215) examines political conditions and the state of the settlements. Meek (No.226), in discussing the

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situation of the Maoris includes several alarming reports concerning their numerical increase, but at the same time also concerning their high mortality rates and he concludes his study with an appeal to have the Maoris participate more fully in the work of the State.

The process of settling the country by the white population is discussed in a number of articles, most of which are of a historical type, e.g. Cowan (No.219) or else of a historical nature, e.g. Sinclair (No.220). Rolleston (No. 221) gives a highly instructive account of the preservation of old customs of the former immigrants down to the present time. This has in many instances been the result of isolation. Tocker (No.222) considers the question of population too much from an exclusively New Zealand point of view; and his work is not of great

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importance, but Cumberland (No.223) has treated competently, though briefly, of changes in the population. The natural progress of development of the population is described by Calvert (No.224), who also brings out clearly the trend toward movement into the larger centers of settlement. The social composition is treated by Jacoby (No.227); and Lewthwaite (No.228) has studied the number of inhabitants and density of settlement during the times of the Maori rule. Murphy (No.230) concerns himself with changes brought about by the Europeans on both Islands.

(8) AGRICULTURAL GEOGRAPHY

232. Brasch, Ch.: New Zealand. Man and Nature. (GMag.12,1949, pp.332-43, Pict.)

233. Cumberland, K.B.: A Century's Change from Natural to Cultural Vegetation in New Zealand. (GRev.30,1940,pp.529-44.)

234. Alley,G.T., and D. Hall: The Farmer in New Zealand. Wellington 1941. X, 150 pp., Dept. of Internal Affairs.

235. Grange, L.I.: A Basis Scheme for Land Classification. (NZScTechn.,Sect. A., 26, 1944, pp.136-41.)

236. Cumberland, K.B.: The Survey and Classification of Land in New Zealand: a Basis for Planning. (RSNZTrProc. 74, 1944, Pat.II, pp.185-95.)

237. Clark, A.H.: The Historical Explanation of Land Use in New Zealand. (J. of Econ.Hist.,New York, 5, 1945, pp.215-30.)

238. Grange, L.J., W.M.Hamilton, P.M.Smallfield: Problems of Land Utilisation and Conservation in New Zealand. (R.S.Empire Sc.Conference Papers, London 1946, 5 pp.)

239. Mulgan,A.E.: Pastoral New Zealand. Its Riches and its People. A descriptive Survey of the Dominion's Farming (with illustrations). Christchurch 1946, 96 pp.

240. Farming in New Zealand. (NZDept.of Agric.B.No.252, Wellington 1946.199pp.)

241. Cumberland, K.B.: Land Problems in New Zealand. A Review. (GRev.26,1946, pp. 137-41.)

242. ---: The Importance of the Land: the Future of New Zealand Agriculture. (NZG Reprint Ser. No.5, 1948.)

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243. McCashill, L.W.: Some Problems of Land Use in New Zealand. (NZG S.Rec. Publ. 1948, No.6, pp. 8-10.)

244. Cumberland, K.B.: The Agricultural Regions of New Zealand. (GJ112,1949, pp. 43-63.)

245. Stanton, C.R.: The Vengeance of Tane. (GMag.22,1949,pp.198-208.)

246. Smallfield, P.M.: Land Improvement. (NZJ. of Agriculture 79,1949,pp.421-32.)

247. Cumberland, K.B.: New Zealand Agriculture, 1930-50.(GRev.43,1943,pp.117-19).

248. Zotov, V.D.: Survey of the Tussock-Grasslands of the South Island of New Zealand. (NZJSc.Techn.,Sect.A,1938,pp.197-244.)

249. Cumberland, K.B.: Burning Tussock Grassland, a Geogr. Survey. (NZG 1, 1945, pp.149-64, K., 4 Pict.)

250. Allan, H.H.: Tussock Grassland or Steppe. (NZG 2, 1946,pp.223-34.)

251. Hamilton, W.M.: A Survey of the Dairy Industry in New Zealand. (NSJSc. Techn. 23, 1942, pp. 1-35; 157-85; 257-85.)

252. Cumberland, K.B.: High Country "Run." The Geography of Extensive Pastoralism in New Zealand. (EconG, Worcester, 20, 1944, pp.204-20.)

253. Sears, P.D.: The Regional Variety of Pasture Growth in New Zealand. (NZG 1, 1945, pp.57-82.)

254. Riccardi, R.: La Modificazione apportata della colonizzazione europea alla vegetazione della Nuova Zelanda(Changes wrought in New Zealand Vegetation as Result of European Colonization). (BSGItal.,Roma, ser.VII,1945,pp.10-19.)

255. Deane, J.: The Lobum Run: North Canterbury.(NZG 2, 1946,pp.345-54,Pict.)

256. Aitken,M.: The Maniototo Basin, Central Otago: from Natural to Cultural Landscape. (NZG 3, 1947, pp.59-74,Pict.)

257. McLeod,D.: The Condition of the Sheep-Farming Industry in New Zealand. (NZG 6, 1950, pp.72-78.)

258. Chritchfield, H.J.: Pastoral Murihiku. (NZG 7,1951,pp.1-20.)

259. Davies, M.J.: Irrigation in the Canterbury Plains. (Geography,Manchester, 25, 1940, pp.68-75.)

259a.Cottrell, V.M.: Gift of the Gods. (Walkabout, Melbourne,6,1940,No.12, pp. 19-20.)

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260. Cunningham, G.H.: The Introduction of Plant Diseases into New Zealand. (NZG 2, 1946, pp.247-52.)

259b. Farrell, B.H.: Ahuriri Lagoon, New Zealand. A Study of Landscape Change and Reclamation. (EconG. Worcester 28, 1952, pp.160-70.)

259c. Moke, J.A.: New Zealand: Marketing a Pastoral Surplus. (Econ.G.Worcester 23, 1947, pp.248-55.)

261. Pohlen, I.J., C.S.Harris, et al.: Soils and some Related Agricultural Aspects of Mid Hawkes Bay. (NZ Dept. Sc. and Industr. Res.B.No.94. Soil Bureau Publ. No. 15, 1947, 176 pp., Map.)

262. Packard, W.P.: Lake Coleridge Catchment: A Geographic Survey of its Problems. (NZG 3, 1947, pp.19-40, 13 Pict.)

263. Adamson, N.J.: The Fruitgrowing Industry of Nelson. (NZG 5, 1949, pp.147-57.)

264. Roche, V.A.: Seafishing in New Zealand. (Walkabout, Sydney, 15, 1947, pp. 29-32, Pict.)

265. Patton, D.: New Zealand Fisheries, a General Survey. (NZG 8, 1952, pp.91-103.)

266. Burns, M.M.: Phosphate in New Zealand Agriculture. (NZG 8, 1952, pp.125-37.)

Very likely the most tremendous change ever undergone by New Zealand was occasioned by the sudden irruption of Europeans and of the animals and plants that came with them and acted as the most powerful factor in changing the face of the landscape when the latter was subjected to cultivation. On this subject Brasch

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(No.232) has contributed an interesting report; and Cumberland (No.233) shows how the change into a cultural landscape was effected in this manner. The organization of the Islands' agriculture was treated of in a lengthy pamphlet (No.240) brought out by the Ministry of the Interior, where much emphasis is placed on the aspects of development. Differences of the soil in various individual territories, and the classification of these soils, have been the subject of several studies by Grange (No.238) and Cumberland (No.236). The former tends more to supply a practical example for judging the soils, while Cumberland concerns himself with the question of their distribution over different areas and the problems of planning that result for the future. A detailed treatment of the pasture areas is also provided in Bulletin No. 252 (No.140), published by the Ministry of Agriculture. At the same time, however,

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attention is devoted also to the cultivation of the different species of commercial crops. Cumberland (No.241) has evaluated these studies, along with others, in his survey. He likewise discusses the problems that arise for agricultural from the special situation created by the lack of phosphates. He takes up the extraordinary changes that have occurred in the agricultural structure and in the conditions of crop-raising, both of which have undergone striking modifications since 1935. He calls attention to the very valuable study by Hamilton (No. 251) on destruction of the soil, a development that has inflicted great disadvantages upon the country's agriculture. This was the occasion for his study on the future of agriculture in New Zealand (No.242). This various studies, finally, led Cumberland (No.244) to devise a subdivision into a number of "Agricultural Zones," and a classification that must be taken into account also in establishing systematized divisions of the landscape. A number of relatively short publications deal with proposals for improving the agriculture, especially by way of soil improvement and improved methods in the use of fertilizers. By way of summary, Cumberland then supplies (No.248) a survey of developments during the time from 1930 to 1950.

One can readily understand that a large amount of attention should have been devoted to the pasture lands, since these constitute the principal areas of utilized land surface. Use is being made chiefly of certain areas on the South Island, areas thickly covered with tuft grass. Cumberland (No.249) has checked up on the prairie-burning practices hitherto used to increase the fertility of the land, and he has strongly emphasized its disadvantages. A decline of the gass-cover can be observed especially in Central Otago, where the steppe land formerly comprised 25% of the total area, and where the practice of burning has

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had the effect of turning useful lands into a desert. He cites the literature published on this subject since 1869. The above-mentioned work is probably the most instructive that has appeared on the subject of pastoral economy on the South Island. Zotov (No.248) furnishes merely a survey of this topic. Allan (No.250) analyzes the term "steppe," which is being applied to the tussock grasslands. There exists considerable difference of opinion concerning the term in question.

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Hamilton's study (No.251) of cattle-farming and the use of its products is the most complete treatment of the subject that has appeared so far (cf. No.240). The great variety of the pasture lands and the differences occasioned by the climate have been described in detail by Sears (No.253). Sears endeavors to provide a geographic interpretation of the various individual territories. The history of one single farm since 1861 forms the subject of a study by Joyce Deane (No.255), this farm serving as an example of farms in the Otago region. Aitken (No.256) deals with the deterioration, and thus change, of an entire territory, caused by the use of unsuitable methods; and he then discusses readjustment to more modern methods of cultivation and utilization of the product. In localities where agriculture is endangered by a Föhn-type of winds, an effort has been made to provide a remedy by irrigation. Davies (No.259) gives a detailed account of the region between Rangitata and Rakaia, where shelter belts failed to provide a remedy, and where the irrigation of appr. 16,000 sq.km. of land is now expected to bring help. This systematic plans, which calls for canals lining the rivers is presented by Davies with the aid of illustrative sketches and air photos. Two further studies are concerned with improvement of the soil. Cottrell (No.259a) describes the changes that have affected the coastal region as result of the Napier earthquake in 1931, an occasion where a lagoon was converted into 7,500 acres of fruitful farmland where intensive farming is now in progress. Farrell (No.259b) shows how in the coastal areas mechanized scientific farming has produced a good yield from formerly barren lands. The contrast between the relatively sterile hill-lands and the coastal lands, eroded by drainage from the former, and now rendered fertile, is effectively brought out by this author. Moke (No. 259c), finally, gives an analytic study of markets for the post-war period of New Zealand.

Cunningham (No.260) has discussed the plant diseases brought in by the import shipments of seeds for the farms. The process of erosion that has resulted from destructive methods now even threatens to paralyze the supply of electric energy. This result is discussed by ~~Coleridge~~ Packard (No.262), who uses Lake Coleridge as an example. The fisheries, being a supplementary branch of industry, offered the first occasion for getting a foothold in New Zealand. After the whale-catch had declined it took a long time before coastal fishing could be

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revived. There are two articles giving information on this subject. (No.164,265.)

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267. Brady, C.T.: Nueva Zelandia, país y pueblo (New Zealand, the Land and the People). (RevGAm., Buenos Aires, 31, 1949, pp.85-90.)

268. Adkin, G.L.: Horowhenua, its Maori Place-Names and their Topographic and Historical Background. Wellington 1948. Wellington 1948. 446 pp.,159 Fig., 12 Maps, and 8 Tables. Photos.

269. The Growth of a City: Auckland 1840-1950. (NZG 6, 1950, pp.190-97.) - Ref.: NZG S. DUNEDIN, No.9, 1950, 3-4.

270. Pownall, L.L.: Metropolitan Auckland 1740-1945. (NZG 6,1950,107-24,Maps.)

271. --: Metropolitan Auckland: The Contemporary Character of a New Zealand Metropolis. (NZG 7, 1951, pp.21-42.)

272. --:Feilding:A Rural Township and its Region.(NZG3,1947,161-77,10 Pict.)

273. Tweedie, A.D.: Land Utilisation in Metropolitan Dunedin. (NZG 8,1952, pp.30-47, Maps,Pict.)

274. Somerset,H.C.D.: Littledene: A New Zealand Rural Community. Auckland, London 1938, 102 pp., Pict.

275. Parks, F.: Land Utilisation in Metropolitan Christchurch. (NZG 2, 1946, pp.279-314, 14 Pict., Map.)

276. Mulgan, A.: The City of the Strait: Wellington and its Province. A Centennial History. Wellington 1939, 349 pp.

277. Duncan, J.S.: The Form and Function of North Canterbury Township. (NZG 5, 1949, pp.77-85, Maps.,Pict.)

278. Furkert, J.W.: Westport Harbour.(RSNZTrProc.76,1947,373-402,Maps,Diagr.)

279. Botts, A.K.: Some Problems in New Zealand's Political Geography. (Science (monthly), New York, 1941, pp.503-18.)

280. Hewland, J.L.: Manufacturing in New Zealand, its Oustanding Characteristics. (NZG 2, 1946, pp.207-22, Maps, Pict.)

281. Pappe, H.O.: Manufacturing in New Zealand: a Specific Example. (NZG 2,1946, pp. 329-44, Pict.)

282. Insull,H.A.H.: The Solar Salt Undertaking at Lake Grassmere. (NZG 4,1948, pp. 155-62,Maps, Pict.)

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283. Withers,L.F.: Hydro-Electric Development in New Zealand. - Reviewed: NZG No.8, 1949, pp. 9-19.

284. --: The Development of Hydroelectric Power in New Zealand. (NZG 6, 1950, pp.53-71, Pict.)

285. Johnston,W.B.: The Development of Communication Lines across Taranaki Uplands. (NZG 6, 1950, pp. 171-89, Pict.)

286. Fox, J.W.: Railway Transport in New Zealand. (NZG 7, 1951, pp.154-61.)

287. Bishop,F.H.: Air Transport in New Zealand. (NZG 8,1952,pp.157-62.)

The studies on social geography and those on the country's economy constitute only a small part of the literature that has been published on the subject of New Zealand. The settlement of a former Maori territory has been described by Adkin (No.268) in an account dealing with Horowhuma, where this author makes use of a great variety of discovered remnants. This study is accompanied by an excellent topographic introduction, and yields an abundance of information concerning the region described. Some of the New Zealand cities, which within a small number of years developed into nuclei of settlement, have been dealt with by a number of different authors. Among the many studies that convey information concerning Auckland, those by Pownall (No.270,271) were particularly rich in results. With the help of excellent illustrations this author gives an account both of the development and the function of the inner core of the city. Likewise highly informational is the study that deals with Feilding (No.272), though one is impressed with the fact that all these geographics of the cities follow pretty much the same plan of presentation. Probably the best of these studies was contributed by Parks in his dissertation, of which the article in NZG (No.275) is merely an extract. The article by Duncan (No.277), likewise, is of great value. It contains an exemplary interpretation of air photos. The country's industrial development, to which more attention has come to be paid in recent times, is treated in an article by Howland (No.280). Citing as an example the four large cities (Auckland, Wellington, Christchurch, and Dunedin) he discusses the increase of areas taken up and attempts a classification of the industries. The statistical data used by this author go back to 1938. Pappe (No.281), who treats of the same

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subject, using, however, only one factory to illustrate the discussion, clearly sets forth the difficulties encountered in operating a factory profitably in New Zealand. This point of view must be brought to bear also on the production of salt at the northern extremity of the South Island, this production being intended to eliminate, if possible, the necessity of importing salt. Of some importance also has been the increased utilization of water power, especially since sufficient quantities of water and suitable locations are available. This subject is taken up in two articles by Withers (No.283, 284). The heavy freight traffic handled by the railroads can be found described in an article by Fox (No.286). This article contains a well-drawn comparison of the two Islands, as regards density of train traffic, with the conditions now prevailing in England. The author discusses the difficulties that will have to be overcome. Airtransportation has not until recently occupied a position of prominence. This subject is discussed in an article by Bishop (No. 287).

In concluding, if we now briefly survey once more the studies brought out concerning the two Islands, we find that only a very small number of highly meritorious publications on the subject can be regarded as geographic treatises in the strict sense of the term. Outstanding among these are the morphological studies by C.A. Cotton, and also the articles by K.B.Cumberland, which, however, are primarily concerned with the cultural aspects of geography.