

HANDBOOK
OF
CULTURAL INSTITUTIONS
IN CHINA

PREFACE

The past decade has witnessed a vast increase in cultural progress in China. Institutions on Western and modern lines have sprung up in numbers in every part of the country, even to the outermost limits of the interior provinces. These institutions have also taken on a quality of permanence in contrast to the ephemeral qualities which characterised them in former years.

Up to 1934 China possessed no complete survey of what then purported to be her cultural standing, but in that year an effort was made to remedy that defect when the present writer produced a *Handbook of Cultural Institutions in China* at the request of the Chinese National Committee on Intellectual Co-operation.

This initial production was of necessity in Chinese, but in spite of language difficulties it roused such interest abroad that a similar work in the English language was suggested. The present work in the main follows the Chinese edition, but is a more complete survey because of the addition of a hundred new organizations, making a total of five hundred. Even this number does not exhaust the actual list of cultural institutions in China, but all the important ones have been included.

As a volume of reference this work should be useful, but the intention was to make of it more than a mere catalogue. To this end details concerning each cultural body have been provided such as origin and history, membership, finance, activities, publications, etc. But these data have not always been available, and they have often had to be supplemented by information from other sources. Research organizations, though far from numerous in China, have received the author's special care and the fullest details are given with regard to them.

It is hoped that this little volume will give non-Chinese a more familiar glimpse of Chinese cultural life, and that it will assist towards a closer intellectual rapprochement between China and other nations.

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Shanghai, January, 1936.

BY THE SAME AUTHOR

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(in Chinese)

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ACADEMIA SINICA.—*Central Offices of Administration : 48*
Cheng Hsien Chieh, Nanking.

The Academia Sinica—also known as the National Central Academy or Research Institute—owes its origin to the advocacy of the late Dr. Sun Yat-sen, but the idea did not take shape until the formation of the National Government in the spring of 1927 when the Central Political Council passed a resolution authorizing the establishment of the Academia Sinica, and at the same time appointing a committee of three to prepare the way for its inauguration. In November of the same year an official draft committee of more than thirty members met and drew up a constitution for the Academia Sinica, placing the latter under the direction of the newly created University Council. In April, 1928, the University Council was however superseded by the Ministry of Education, and the Academia Sinica was granted the status of an independent organ under the direct control of the National Government. With the first meeting of the Academy Council on June 9, 1928, the Academia Sinica may be said to have begun its legal existence.

Being the highest scientific institution in the land, the Academia Sinica has two main objectives, namely, to carry on original scientific research, and to act as an organ for promoting, directing and co-ordinating scientific progress in China. In the latter category may be mentioned such instances of activities as the calling of the National Meteorological Conference in April, 1930, the participation in various international conferences, the delivering of lectures on scientific subjects through the Central Broadcasting Station at Nanking, the organization of the National Scientific

Expedition to the North-West, the founding of the National Textile Laboratory in co-operation with the Cotton Industry Commission of the National Economic Council, and the organization of the National Central Museum in co-operation with the Ministry of Education.

As at present constituted, the Academia Sinica has ten Institutes, viz., Institutes of Astronomy, Biology, Chemistry, Engineering, Geology, History and Philology, Meteorology, Psychology, Physics, and Social Sciences. Each Institute is presided over by a director under whom are research fellows, research associates, honorary fellows, correspondents, assistants, and research students. The Academia Sinica further maintains a National Research Council which is composed of thirty members selected from among the scientific experts of the country. Through this Council the Academia Sinica functions as the highest national organization for conferring honours upon Chinese and foreign scholars who have distinguished themselves in various branches of science.

1.—Institute of Astronomy.

Tzu Chin Shan, Nanking.

Formerly located in the historic Drum Tower of Nanking, the Institute of Astronomy has, since July, 1934, been housed in the new Observatory Building situated on the third peak of Tzu Chin Shan or Purple Mountain just outside the Capital. The Institute is therefore also known as the Purple Mountain Observatory, the geographical co-ordinates of which are as follows: Longitude, 7h. 55m. 18s. E; Latitude, 32° 4' 4" N; Altitude, 267 metres.

There are six principal buildings in the Institute campus, namely, the Main Building containing the 600-mm. reflector, the Meridian Circle Building, the Equatorial Building housing the 200-mm. refractor telescope, the Ross Camera Building containing the 100-mm. Ross Camera, the Dormitory, and the Residence. They are all arranged in a semi-circle with equal distances between them.

At present the research activities of the Institute are along four general lines:—

(1) **Stellar research by spectrophotometry.**—Work on stellar spectra especially in the ultra-violet region is being continued with a view to obtaining a better knowledge of the temperature conditions of the stars and a clearer understanding of the behaviour of hydrogen atoms in the stellar atmosphere. These investigations are at present confined to the stars of Classes A and B.

(2) **Solar research.**—Observations of the sun with the Hale spectrohelioscope were started in 1931, and they are being continued. The principal phenomena under investigation are sunspots, faculae, hydrogen foculli, eruptions, and prominences. This work is undertaken in co-operation with an international scheme for the study of solar activities, the Meudon Observatory at Paris being the headquarters for this enterprise. Monthly reports are sent there from twelve co-operating observatories for collective analysis. In this manner valuable results are obtained especially regarding the relationship between the solar activities and some terrestrial phenomena such as magnetic storms, atmospheric charges, etc.

(3) **Researches on cepheid variables.**—These photographic studies on cepheid variables of short period also form part of an international programme, Harvard College Observatory being the headquarters for these researches.

(4) **Work with the Meridian Circle.**—Before starting serious work with the Meridian Circle, much time is being devoted to the study of different types of clocks and chronographs in order to obtain the best kind available. Related subjects such as the improvement of radio broadcasting and reception of time signals are also being studied. Apart from the ordinary research work, the Institute compiles official almanacs for the government, co-operates in the work of standardizing Chinese astronomical nomenclature and terminology, and takes part in the organizing work for the observation of the total eclipse of the sun which is due to occur in Central China in September, 1941.

2.—Institute of Biology.

68 Cheng Hsien Chieh, Nanking.

The Metropolitan Museum of Natural History was established in January, 1930, but in order to conform to the general constitution of the Academia Sinica, the Museum was reorganized in July, 1934, under the title of the Institute of Biology.

Besides the usual equipment, the Institute possesses about 95,000 biological specimens consisting of 20,000 vertebrates, 35,000 invertebrates and 40,000 plants. Among the vertebrates are 600 mammals, 7,000 birds, 2,000 reptiles, 2,400 amphibians, and 8,000 fishes, while the invertebrates are mainly represented by annelids, echinoderms and arthropods. Of the 40,000 plants, 30,000 are phanerogams, the rest being fungi. In addition, there is Dr. Wu Hsien-wen's personal collection of free-living and parasitic nematodes amounting to 12,000 individuals.

For the first five years the research work of the Institute will be mainly confined to taxonomic and economic studies of Chinese animals and plants. The following is a summary of investigations now in progress : —

(1) **Fishery.**—Beginning with 1935 the Institute is making an extensive survey of the marine fishery of China covering almost the entire coastal line between Chinwangtao and the Bay of Tonkin. The whole coastal line has been temporarily divided into four sections, and each section will be thoroughly surveyed in the course of a year, a period of four years being considered necessary to complete the whole work. Some of the oceanographic features such as temperature, current and salinity of sea water will also be determined at the same time.

(2) **Plankton.**—Simultaneously with the fishery survey, the marine plankton which principally consists of diatoms, dinoflagellates, protozoa., hydromedusae, and copepods, will be studied both quantitatively and qualitatively. This work is of utmost importance in the solution of certain fishery problems since the planktonic plants and animals are known to form the primary food of fishes.

(3) **Marine fauna.**—In the survey of fishery conditions and planktonic lives of the China Seas, a collection of marine animals is also to be made from the sea bottom as well as from the littoral regions. The specimens thus obtained will be systematically studied. At present some members of the Institute are working on groups of protozoa, sponges, coelenterates, echinoderms and crustaceans collected from Hainan Island and the coastal regions of Chekiang and Fukien. Taxonomic studies of certain marine fishes collected from various places have been partly completed.

(4) **Entomology.**—The group of insects in which the Institute is interested at present is Coleoptera phytophaga. Researches on the structure of certain chrysomelid larvae and the life history of chrysomelidae and other families of this particular group are being continued, while the male genitalia of the same group will be morphologically studied. As regards economic entomology, the problem of rice insects in Kiangsu and Chekiang provinces will be investigated later.

(5) **Parasitology.**—In parasitology the subjects under study are the intestinal protozoa of Chinese monkeys and domesticated animals and the parasitic nematodes of fishes, amphibia, reptiles, birds and domestic animals. In these studies, special attention is being paid to the biological relationship existing between the parasites and their respective hosts so as to throw some light on the practical methods of controlling the diseases which the former cause especially in domestic animals.

(6) **Mycology.**—In view of the fact that Chinese fungous flora is so far very little known and that few institutions in China take up the study of mycology, the Institute has decided to make an extensive collection of fungi from selected regions in China with the view of making a systematic study of these plants.

(7) **Plant pathology.**—The most important economic application of mycology lies in plant pathology. Information obtained from various sources show that diseases due to pathogenic fungi have taken annually a heavy toll of our farm and horticultural crops. The Institute is now making

researches on the diseases of cotton and the methods of their control, which will be followed in due course by studies on other crop diseases.

(8) **Agrostology.**—Studies of the grasses of Hopeh and of the eastern and southern provinces are now under way. To meet the long-felt want of the agriculturists in this country, it is proposed to study in addition the cultivated grasses, i.e. the classification of the varieties of cereal crop plants. A part of the time will also be devoted to the study of Chinese bamboos.

(9) **Phanerogamic botany.**—Apart from the grasses which are grouped under agrostology, all other flowering plants as well as ferns are included in this division. In the last few years the Institute has collected a considerable amount of material especially from south-western China, and consequently much time is consumed at present in studying them. The Institute will later devote more attention to the flora of Kiangsu and Hunan, simultaneously taking into consideration the economic uses of timber trees and the taxonomic identities of drug plants. Besides the ordinary research work, the Institute has taken part in the Biological Expedition to Yunnan in June, 1933, and in a further expedition to Hainan Island in January, 1934, in the exchange of specimens and publications with the leading institutions in China and abroad, and finally in the training of research workers.

3.—Institute of Chemistry.

37B Brennan Road, Shanghai.

Established in July, 1928, the Institute of Chemistry takes as its principal aims the promotion of research work in chemistry, and the elevation of the general standing of chemical research in China. Through the compilation of data concerning native raw and finished products and through the solution of industrial problems, the Institute seeks to serve the commercial and industrial interests of the country.

Among the research problems which are being studied may be mentioned the following:—

(1) **Organic and biochemical research.**—(a) Sterols, bile acids and sex hormones, (b) Pyrimidines, (c) Vitamines, (d) Constitution of alginic acid, (e) Chemical composition of Ginkgo biloba, and (f) Chemical examination of Chinese drugs.

(2) **Researches on physical chemistry.**—(a) Absorption spectra and thermodynamic constants of simple polyatomic molecules, and (b) Determination of free energies of simple cyanides.

(3) **Technical analysis and research.**—(a) Utilization of the Pingyang alunite, and (b) Analysis of Chinese minerals.

The Institute has recently organized a micro-analysis service on account of the fact that the quantitative organic micro-analysis as worked out by Professor Pregl is now universally employed in European laboratories, and that it has become almost indispensable to workers in organic and biochemical research, especially in the study of such substances as enzymes, vitamins, hormones, etc., where the isolation of substance is a tedious and costly operation. Since this is the only micro-analysis service found in China, the Institute is prepared to place its facilities at the disposal of investigators from other institutions.

4.—Institute of Engineering.

37B Brennan Road, Shanghai.

The Institute of Engineering was founded in March, 1928. It shares with the Institutes of Chemistry and Physics the same building known as the Laboratory of Physical Sciences and Technology. Besides Material Testing, Mechanical, Electrical, Metallographic, Industrial Analytical Laboratories and a machine shop, the Institute possesses the following special laboratories: —

(a) **Glass Laboratory.**—Established in September, 1932, by the Institute of Chemistry with the object of taking up researches on glass and glass manufacture, the Laboratory was transferred to the Institute of Engineering in July, 1934. It is composed of a research laboratory and a semi-industrial working plant, each of which is again divided into several departments.

(b) **Iron and Steel Laboratory.**—The Laboratory has been established with the view of taking up studies relating to iron and steel industries which are as yet undeveloped in this country. The Laboratory has the following departments :—Melting Department, Moulding Department, Forging Department, Heat Treatment Department, and Testing Department.

(c) **National Ceramic Laboratory.**—This is fully described elsewhere under its own heading.

(d) **National Textile Laboratory.**—A full description of this Laboratory will be found elsewhere under its own title.

As the scope of engineering is so wide and varied, and the personnel and funds at the Institute's disposal are so limited, the Institute is obliged at present to confine its activities to the following fundamental studies :—

(1) The solution of those basic engineering problems which are essential to the development of new industries in China.

(2) The improvement by scientific methods of old Chinese industries which, on account of their special merits, may still have a place in the world's industries.

With regard to (1), choice is given to iron and steel which form the sinews of modern civilization, while concerning (2), porcelain and pottery are selected for the unique positions they occupy among the old Chinese industries.

Apart from research activities, the Institute of Engineering examines claims respecting mechanical inventions submitted to the government by private individuals, and supplies iron and steel castings of its own make to government institutions and hard porcelain articles to chemical and electrical industries, in addition to making tests and giving technical advice to various organizations and the public.

5.—Institute of Geology.

Pei Chi Ko, Nanking.

The Institute of Geology was originally established in Shanghai, but on account of its increasing activities, it had to be removed in 1932 to Cheng Hsien Chieh, Nanking, and again in 1934 to a new modern building at Pei Chi Ko.

The activities of the Institute have always been guided by the principle that its research programme should go a step further than the mere establishment of facts. Because of the vastness of the field of geological exploration in China, the Institute has considered it expedient to undertake a certain amount of survey work in co-operation with other geological surveys. Unnecessary repetition of mapping work is thus avoided, and each member, while mapping in the field, is required to pay special attention to a certain problem or problems in connection with the particular section to which he belongs. The Institute also encourages geological research by persons not members of the Institute. Any person who submits a paper or papers embodying the results of his researches may receive a monetary grant from the Institute, the amount being dependent on the quality of the work submitted.

For the purpose of research the Institute is divided into four sections, namely, (1) Stratigraphy and palaeontology, (2) Petrography and mineralogy, (3) Economic geology, and (4) Dynamic geology and geophysics. The Institute has one chemical laboratory for the analysis of minerals and rocks, one geophysical laboratory for testing the elastic properties of rocks, one mineralogical laboratory for determining the physical and micro-chemical properties of transparent and opaque minerals, and one palaeontological laboratory.

During the year 1928-9 the Institute sent three parties to the province of Hupeh to explore the mining areas there. The first party mapped the eastern part of south-eastern Hupeh, paying special attention to iron ores which are the most important of all the metalliferous deposits in that region. The second party visited the western part of south-eastern Hupeh with the main object of unravelling the structure of the coalfields of Puchi, while the third party explored the central part of the province but found the coal-bearing strata there being largely of Rhaetic age. For working out the structure and tectonic history of the Tsinling Range which forms the natural division between North and South China, the Institute decided to co-operate with the National Geological Survey of China. Accordingly, a party was sent out in

1929 to conduct field work in the central part of the Tsinling Range. Among the numerous finds are a fairly well-preserved turtle and many fragments of bones and teeth. These were all procured from a marly deposit intercalated in Young Red Sandstone which is extensively distributed in South China, and which has so far never yielded any trace of organic remains. This rare discovery of an extinct fauna is likely to throw important light upon the last orogenic period and consequently the history of the Tsinling Range. In the year 1930-1 the field staff of the Institute devoted their activities to the provinces of Chekiang, Anhwei, Kiangsu, and Kiangsi with a view to determining the stratigraphical sequence and elucidating the tectonic history of the various districts of these provinces. In order to study the igneous phenomena of the east coast of China, a party from the Institute spent several seasons along the coastal belt of Chekiang and in parts of the Shantung Peninsula. According to the conclusions reached by this party, the igneous rocks of Chekiang coast may, in the order of their arrival, be classified into four categories, namely, (1) the acid volcanics, (2) the granite and diorite intrusions, (3) the lamprophyre dikes, and (4) the basaltic lava sheets. The same sequence has been observed in the Shantung Peninsula. During the year 1932-3 three parties from the Institute went to South China to study the geology of the Nanling Ranges, special attention being paid to the orogenic movements and economic prospects of the regions concerned. Besides a general geological map, the three parties of the expedition drew up a series of reports on the structure and stratigraphy of the Nanling Ranges. The Institute next took up the study of the Nanking Hills. The area to be investigated was divided into three portions, each being assigned to a member of the Institute. Apart from a geological map at 1 : 50000 scale covering an area of about 10,000 sq. km., a report on the geology of the Hills was also drawn up. The stratigraphy of the locality has been worked out in great detail, which will serve as a standard for the Lower Yangtze Valley. At the same time two other members of the Institute undertook the study of igneous geology of the

Nanking Hills. The results of their investigations are fully set out in Monograph Series B, No. 1 of the Institute. In addition to field work, other subjects which are receiving the attention of the Institute are magnetic deposits of Anhwei, lead-zinc deposits of Chekiang and Hunan, alabandite and anorthoclase from Chekiang, granite from Soochow, the Ordovician in the Lower Yangtze Valley, and the geology of North Kiangsi. On the subject of geophysics, the Institute has devoted most of its time to the determination of moduli of elasticity of certain common types of rocks. It is to be noted that results obtained through a dynamic method of determining Young's modulus differ considerably from those obtained through a statical method. These results are especially interesting from a seismological point of view since they may eventually affect the calculations of the thickness of the earth's crust.

6.—Institute of History and Philology.

Pei Chi Ko, Nanking. (Section of Historical Studies :

Pei Hai Kung Yuan, Peiping).

The Institute was formally organized in October, 1928. It was originally located in Canton, but the headquarters of the Institute were later removed to Peiping. On account of the unsettled state of North China during 1932, the Institute, with the exception of the Section of Historical Studies, was removed to Shanghai that year, and finally to Nanking in 1934 when the permanent building for housing the Institutes of Geology, History and Philology, and Psychology was completed at Pei Chi Ko.

As at present constituted, the Institute consists of four Sections, namely, Sections of Historical Studies, Linguistics, Archaeology, and Anthropology, the last Section being created in the autumn of 1934.

Since its inception the Institute has been engaged in the following research activities :—

A.—Section of Historical Studies.

- (1) Researches on Chinese political and cultural history.

- (2) Classification and study of the Cabinet Archives of the Ming and Ching Dynasties.
- (3) Study of bronze and stone inscriptions.
- (4) Textual criticism of ancient Chinese classics.

B.—Section of Linguistics.

- (1) Survey of Chinese dialects and borderland languages.
- (2) Organization of sound archives.
- (3) Researches on general linguistics and experimental phonetics.
- (4) Studies on Hsi-hsia texts.
- (5) Comparative studies on English and Chinese intonation.
- (6) Studies on defective speech.

C.—Section of Archaeology.

- (1) Excavations at Anyang and Chünhsien, Honan.
- (2) Excavations of Black Pottery sites in Honan and Shantung.
- (3) Researches on prehistorical remains in Manchuria and Jehol.
- (4) Survey of Painted Pottery sites in Honan.

D.—Section of Anthropology.

- (1) Study of the physical characteristics of the people of Szechwan.
- (2) Anthropological and ethnological survey of Yunnan.
- (3) Study of Chinese finger prints.
- (4) Study of ancient Chinese skulls.
- (5) Study of correlations of cranial indices.

7.—Institute of Meteorology.

Pei Chi Ko, Nanking.

Established in 1928, the Institute of Meteorology is located on the summit of Pei Chi Ko or Polaris Hill, being about 60 metres above the surrounding country and 67.9 metres above the sea level.

The Institute is composed of five Departments, namely, Departments of Climatology, Aerology, Weather Forecasting, Instruments, and Seismology. There are branch stations of the Institute at Shanghai, Peiping, Taishan in Shantung,

Suchow in Kansu, and Lhasa in Tibet, and with the exception of the station at Lhasa, they are all equipped with recording instruments for pressure, temperature, humidity, wind direction and velocity. The Institute also maintains a radio transmitting station and broadcast twice daily the synoptic data of Eastern Asia.

The following are the principal activities of the Institute :—

(1) **Observations and forecasts.**—Since 1928 the Institute has been taking hourly observations of meteorological conditions. Two weather maps are prepared every day based upon the reports of about sixty stations in China, Japan, Korea, Formosa, Siberia and the Philippine Islands. These reports contain information about barometric pressure, temperature, wind direction, wind force and the state of weather. The general weather conditions of Eastern Asia at 6 a.m. and 2 p.m. 120° M.E.G. standard time, and the synoptic data of about sixty stations in the Orient are radioed at 10 a.m. and 4.30 p.m., and repeated later by the more powerful broadcasting stations of the Ministry of Communications in order to reach more distant countries. The weather prediction in Chinese for the next twenty-four hours is transmitted by radio at 9 a.m. and 8 p.m. daily, and the same is also distributed to Nanking newspapers for publication.

(2) **Upper air investigations.**—Since January, 1930, the Institute has been launching pilot balloons every morning on week-days, weather permitting. On August 11, 1930, the balloon reached an altitude of 23.4 kilometres, stratosphere being encountered at 16 kilometres. From the results of ascents made during the last five years, it is apparent that the north-eastern monsoon in winter seldom reaches the height of 3,000 metres, while the south-eastern monsoon in summer occasionally attains the altitude of 5,000 metres or more. Above the altitude of 1,500 metres the wind is predominantly from the west. Wind velocity increases very quickly with the increase of altitude in winter, while in summer the velocity remains practically constant from the ground up to the level of 10,000 metres. Besides pilot balloons, sounding balloons carrying registering instruments are sent up on international

days fixed by the International Commission of Upper Air Research, but so far the results have been disappointing, as the instruments did not turn up after their release, even though rewards were offered for them. Since the autumn of 1933, the Central Military Academy in Nanking has, at the request of the Institute, been making aeroplane flights, carrying a meteorograph up to the altitude of 4,000 to 5,000 metres.

(3) **Solar radiation.**—Since 1931 the measurement of solar radiation has been included in the regular routine of the Institute. Automatic records of both direct solar radiation at normal incidence and total thermal energy received on a horizontal surface from the sun and sky have been obtained, these being checked from time to time by the readings of a Smithsonian silver disk pyrheliometer which has been recognized as an international standard. The number of dust particles per cc. is collected by Owen's dust counter and counted under a microscope in Nanking every morning. The object of these researches is to measure the incoming solar energy under a variety of atmospheric conditions.

(4) **Climatological compilation and research.**—The Institute has collected climatological data observed at the term hours i. e. 6h., 14th., and 21h. from about seventy stations scattered throughout the country, besides receiving reports from over 300 rainfall stations. The Institute has recently made a compilation for the National Defence League, of all available climatological data recorded in China. Out of about 900 rainfall reporting stations, 518 have records for three years or less, and only 90 have records covering the whole eleven years between 1922 and 1933. In co-operation with the National Agricultural Research Bureau of the Ministry of Industries, the Institute has since 1934 been collecting phenological reports from one hundred observers located in various parts of China. Flood stage readings from different stations along the Yangtze River for the last thirty or forty years have also been collected, and it is to be hoped that a flood warning service similar to that of the United States Weather Bureau may be established when funds permit. In compliance with the