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The Past in China's Present

A Cultural, Social, and Philosophical Background
for Contemporary China

JOSEPH NEEDHAM

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JOSEPH NEEDHAM

Introduction

The ensuing notes are based on discussions of the Oxford Political Study Group at Nuffield College and of the Universities and Left Review Club in London early in 1959. A biochemist by profession, I do not regard myself as primarily a student of contemporary affairs, nor am I a political economist, still less a journalist; but in the course of work with a number of collaborators on the history of science, scientific thought, and technology in the Chinese culture-area,¹ I have found myself deeply concerned with the origins and development of that culture, and have come to see its current changes against the social and philosophical background of many centuries. Indeed, I believe that only so can they be properly understood and appreciated by people of other cultures.

In the adoption of communism by China, this social system and philosophy has for the first time entered (in the language of physical science) a new and different "phase," has diffused across the boundary between two of the great historical civilizations, has been transplanted from one of these vast social organisms to another. Everything has to be learned about this great phenomenon. To what extent did Chinese culture contain a "praeparatio evangelica"? How will it mould the gospel of collectivism in the future? Did China perhaps send contributions westward in earlier times from which it germinated? Such are some of the questions which surge into the mind.

I. Bureaucratic Feudalism: the Non-hereditary Elite in the Non-competitive Society

Let us begin with a brief discussion of China's social structure through the ages. It is probably impossible to understand contemporary China without realizing that great modifications of social class-structure are involved there. If one does not feel sympathy with the urge towards a unitary class-structure of society, the desire for a socialist order, there is little hope of understanding what the Chinese are trying to do. On the other hand, it is quite clear that throughout history the class-structure in China was not at all identical with that of the West, though similarities were by no means absent.

It must at once be said that when one enters into the question of Chinese social structure, one finds oneself in the presence of a great debate which is as yet far from being concluded or even brought to a

¹ "Science and Civilisation in China," in course of publication in seven volumes by the Cambridge University Press. Hereinafter abbreviated as SCC.

focus.² Although there are many differences of interpretation among scholars, I feel quite satisfied on the broad principle that during the past 2,000 years, roughly speaking, China did not have feudalism in the aristocratic military Western sense. Whether the Chinese system is known, as it was by the founding fathers of Marxism, as the "asiatic form of production," or as other people have called it, "asiatic bureaucratism" or "feudal bureaucratism," or as the Chinese very often call it, "bureaucratic feudalism," or whatever other term one likes to adopt—it was certainly something different from anything that Europe ever knew. Sometimes I have been tempted to regard it as a disappearance of all intermediate feudal lords at an early stage in the unification of the empire (after the time of Chhin Shih Huang Ti in the —3rd century),³ and the rule of the country by only one feudal lord, namely, the emperor, operating and exploiting by means of a hypertrophied instrument, the non-hereditary civil service, the bureaucracy, the mandarin, recruited from the "scholar-gentry." It is debatable to what extent this should be called a "class" because it is clear that in different times and to different degrees it had a great deal of fluidity. Families rose into the "estate," if you like, of the scholar-gentry and sank out of it again; and during those periods when the imperial examinations played an important part in the recruiting of the civil service, families which could not produce the right talents and the particular skills and gifts for success in the examinations and the bureaucracy, were not going to survive more than a generation or two at a high level of society.

Thus the *shih*, the scholar-bureaucrats, were the literacy and managerial élite of the nation for two millennia. We must not forget, therefore, that the conception of the *carrière ouverte aux talents* was a Chinese invention and not a French or a European one. Indeed, it has been shown by chapter and verse that the theory of competitive examination for the civil service was taken over by the Western nations in the 19th century in full consciousness of the Chinese example,⁴ even though the sinophilism of the Chinoiserie period had long given place to a certain disillusionment regarding the Celestial Empire and its mandarin as a College of All Sages. Of course, the mandarin was not as "classless" as has sometimes been made out, for even in the best and most open periods, boys from learned homes which had good private libraries had a great advantage. But in any case, the scale of values of the scholarly administrator differed profoundly in all ages from that of the acquisitive merchant.

Here there is no space to go into the details of this non-hereditary civil service which became so supreme in Chinese society after the Chhin and Han, but immediately the fundamental fact of its existence is stated, one can see its relevance to what is happening at the present time.⁵ Surely the basic conception of a non-hereditary élite in a non-

² See the judicious essay of D. Bodde, "Feudalism in China," in R. Coulborn, ed., *Feudalism in History* (Princeton: Princeton University Press, 1956), p. 49; as also, of course, the classical writings of H. Maspero, "Le Régime Féodal," etc., in *Mélanges Posthumes sur les Religions et l'Histoire de la Chine*, Volume 3 (Paris, 1950); and M. Granet, *La Féodalité Chinoise* (Oslo, 1952).

³ The romanization of Chinese names and terms throughout this paper follows that modification of the Wade-Giles system in which an *h* is substituted for the aspirate sign.

⁴ T'eng Ssu-Yü, "Chinese Influence on the Western Examination System," *Harvard Journ. Asiat. Studies*, 7, 267 (1943).

competitive society has much in common with the conception of membership of an organization like the Communist Party, especially when linked with the keen social morality now renewed in China. Is there not something strikingly similar in the dissociation of prestige and leadership from birth and wealth? Moreover, today we no longer have civil servants or bureaucrats of the old style entirely devoted to *theoria* and knowing nothing of *praxis*, but, on the contrary, an élite which understands a great deal about *praxis*, has itself participated in productive work, and may be doing so at the same time as fulfilling its administrative functions and in accordance with the new moral emphases. In other words, a communist ethical and sociological dynamic has built upon age-old Confucian instinct in forming the basic inspiration of the officials and peoples' leaders of today and tomorrow.

II. The Inhibition of the Indigenous Development of Capitalism

The bureaucratic-feudal system of traditional China proved to be one of the most stable forms of social order ever developed. From the time of the first Chhin emperor in the —3rd century down to that improbable medical revolutionary of 1911, it played a leading part in assuring for Chinese culture a continuity shared only partially by Israel among all other nations of the world. But above all it meant (as in India) that there was no indigenous development of capitalism.⁵ The mandarin system was so successful that it inhibited the rise of the merchants to power in the State; it walled up their guilds in the restricted role of friendly and benefit societies; it nipped capitalist accumulation in the bud; it was always ready to tax mining enterprises out of existence and to crush (as it did in the +15th century after the death of Chêng Ho)⁶ all mariners' efforts towards sea trade and expansion; and finally, most significantly, it creamed off for two thousand years the best brains from all levels of society into its own service. This last function alone might temptingly offer itself as an aid to explaining why the feudal system could have given way to capitalism in the West as it did, while bureaucratic feudalism continued calmly on its way. The hereditary aristocratic principle was not calculated to get the best brains into the positions of most power, and when the brightest minds found themselves in merchant business or as royal advisers rather than short-circuited in the hierarchy of the Church, the days of Western feudalism were numbered. In China, on the other hand, the fact that the administrators were drawn from the most intelligent men of their age meant that they did not arouse among the population that intense dissatisfaction with effete and inefficient descendants of aristocratic houses which must have played a great part in the downfall of Western feudalism.

It is necessary therefore for Westerners to realize today that for the Chinese, capitalism was something essentially and intrinsically

⁵ A lapidary description of the essentials of traditional Chinese bureaucratic society and their significance for modern developments has been given by E. Balazs in *Asiatische Studien*, 1953, 77.

⁶ As Schurmann has shown, in discussing traditional Chinese property concepts in *Far Eastern Quarterly*, 15, 507 (1956), the basic idea of individual *freies Eigentum* on which capitalist society was built was absent in China.

⁷ The famous eunuch admiral. For his voyages, see J. J. L. Duyvendak in Yusuf Kemal, "Monumenta Cartographica," Vol. 4 (1939) pp. 141ff., and "China's Discovery of Africa" (London, 1949).

foreign, something imposed upon them at a certain time by Westerners enjoying a military strength based for a few short centuries on their fortuitous development of modern technology. Nor did capitalism in China follow quickly upon the first contacts with Westerners. The Portuguese merchants of the +16th century and the Jesuit missionaries of the +17th had no effect whatever upon Chinese economy, great though their influence was in other ways. Not until the beginning of the 19th century, at the time of the Opium Wars, was it borne in upon the scholar-gentry that modern industrialization was really inevitable. Hence there supervened an interesting transition period when some of the leading bureaucratic officials such as Tsêng Kuo-Fan, Tso Tsung-Thang, and Li Huang-Chang set up arsenals and factories with funds part-private and part-bureaucratic, and with engineers from abroad.⁸ This type of industry, however, naturally lacked the long organizational experience possessed by Western firms, and proved unable to compete with them, so for most of the century Chinese governments and officials found it easier to grant concessions and let the foreigners do the work which they understood. The resulting stranglehold greatly discouraged Chinese-owned enterprise, and it was not until the first World War, when the European powers temporarily relaxed their profit-making activities in China, that indigenous Chinese capitalist industry got a chance to develop. This was based on a new group of people, so small in number that it is difficult to call it a class, which had long been associated in a comprador capacity with the enterprises of foreign firms in China, and which had been successful in applying modern banking methods to Chinese conditions. Even so, it never conquered sectors wider than those of light industry, most of the mining and heavy industry remaining in the grip of foreign interests together with most of the railway transport. Still, it was in strong alliance with them against any socialist movements, and naturally tended to make itself respectable by associating with the most highly respected scholarly official families. The Kuomintang party was nothing but the outward expression of this inward social reality, and its organs of repression had to be quite sharp because in the last analysis capitalism was a form of society which the Chinese had never been accustomed to, did not want, and were less and less prepared to accept. The permanent nightmare of the Kuomintang was that the "dark Satanic mills" of uninhibited capitalist enterprise were evidently not the only gateway to modernization and industrialization.⁹ Another and a better road lay open.

⁸ See the three books by Chhen Chhi-Thien, *L'in Thé-Hsiu, Pioneer Promoter of the Adoption of Western Means of Maritime Defence in China* (Peiping, 1934), *Tsêng Kuo-Fan, Pioneer Promoter of the Steamship in China* (Peiping, 1935), and *Tso Tsung-Thang, Pioneer Promoter of the Modern Dockyard and the Woollen Mill in China* (Peiping, 1938). Compendious and relatively new is Têng Ssu-Yü and J. K. Fairbank, *China's Response to the West: a Documentary Survey* (Cambridge: Harvard University Press, 1954).

⁹ The resolve to move directly from traditional Chinese society to socialism was extremely clear and explicit in the writings of the early Chinese revolutionaries of the anti-Manchu period. They were also highly conscious of many precursor features in traditional Chinese thought and life which were congruent with socialism; indeed, they touched in one place or another upon most of the matters which are discussed in the present review. See a recent interesting analysis of the writings of such men as Fêng Tzu-Yü, Chu Chih-Hsin, and Liang Chhi-Chhao about 1906, by R. A. Scalapino and H. Schiffrin in *Journ. Asian Studies*, 18, 321 (1959). The book by J. R. Levenson, *Liang Chhi-Chhao and the Mind of Modern China* (Cambridge: Harvard University Press, 1953), is also worth reading, though marred by a slant of ironical disparagement of the great struggling intellectual figures with whom he deals.

III. The Need for Quantitative Accounting

One of the most important aspects of the classical mandarin state was what I call its "nosphomeric" character. Probably the reader has never encountered this word before, but that would not surprise me because I invented it myself. It takes me back to a place in Kweichow province during the war where the Bishop of Hongkong and I both had to "anchor" (as the drivers' fraternity used to say) because our trucks were out of order. Thus we had to stop a few days at the little mountain town of Annan. We talked a great deal about the question of "graft and squeeze." "Old China Hands," of course, would descant for hours about the practice of graft and squeeze at all levels in traditional Chinese society, and I came across it myself in many cases. For example, I met one old *hsien chang* (city magistrate) in Kansu province, an aged man who used to tell how things were done in the old days—how when the *chuang yuan* in charge of eight counties came round, there would be a supper with chopsticks and bowls all of silver, and these would be sent round to his apartment afterwards. This had been done for centuries; it was the recognized thing. It was his "rake-off," and everything went well as long as people did not take more than their proper rake-off and did not upset the system by trying to be "honest" and refusing these things. It was part of the way the society worked. The old expression, *ta kuan fa tshai*, "to rise in the civil service and acquire great wealth," was the standard thing in classical Chinese society, and it is clear that this ought not to be called "graft and squeeze" because it was the way in which a non-currency society operated. Since from ancient times the taxes were collected at the periphery and sent to the capital in the form of actual kind, of barges loaded with rice or other grain, or bales of silk, and since also it was the practice in most dynasties never to pay a living wage to provincial officials, it was obvious that the only thing that they could possibly do to run the local show was to take their 10 per cent or whatever it was, and this was accordingly done. I therefore said to Bishop Ronald Hall, "What we want is a non-pejorative word for graft and squeeze." After he left next day at about five o'clock in the morning, I found when I got up a little piece of paper under my door saying "Acts V.1." When I got to a Bible and looked this up, I found it was the story of Ananias and Sapphira who kept back part of some money which was supposed to be given to the church. Although St. Peter disapproved of this, with serious consequences to the poor benefactors, the word used in the text has itself no bad connotation. So, as *nosphizein*, meaning to sequester, and *meros*, a part, gave just the word wanted, I therefore invented and still propose to use the term "nosphomeric hydraulic Asian bureaucracy" (see section VI).

What has all this to do with the issue? Just that profound changes in administrative "morality" had to accompany social and industrial changes if the old society was to be transformed into a modern nation. I knew personally many men in China during the war who did not care to make the old society work, who felt that it was totally out of keeping with modern needs, who were, in fact, believers in what one might call "quantitative accounting," and not prepared, for example, to sign as having received ten dynamos when, in fact, they had only received eight. I knew engineers who lost their jobs and had plenty of trouble

with the Kuomintang in consequence. These men were good engineers, knowing little about communism and often quite non-political. They were really the forerunners of what we must call the new moral emphasis. This is a cardinal feature of communist China and derives directly from the creation of a new society. It is not unlike the new ethos of business morality which grew up in the early period of capitalism when there was a similar association between puritan morals and quantitative accounting. But the parallel is at a different level; in China the new élite are not building upon the old basis. In fact, they have arisen because they alone are appropriate to a socialist society based on natural science and technology. This can only work by quantitative measurement and impersonal, though not consequently inhuman, computation; and the new moral emphasis, deeply Confucian, as we shall later see, is the characteristic ethical accompaniment or superstructure of a society which may well continue to be "hydraulic" but which in a neotechnic age can never again be "nosphomeric."

IV. Civil Versus Military Ethos

Another very vital aspect of the bureaucratic form of feudalism was that it generated a civil and not a military ethos in Chinese society. I remember once, about 1943, sitting in a very dirty little village street at the time of a truck breakdown with Sir Frederick Eggleston, who was then Australian Minister in Chungking. We were putting in time while waiting by drinking tea in one of those *chha kuan* or teahouses in the street of a Szechuan village. Seeing before our eyes the general medieval conditions, the lack of sanitation, the poverty of the people (all very different from what one finds in villages now), he turned to me and said, "Why, at any moment one might imagine a knight and a troop of men-at-arms come riding down the village street." To which I replied, "Well, yes and no, because in fact it would have been a rather cultured person in a litter, certainly not wearing armour. The men-at-arms would have been very poorly equipped, and, in fact, the magistrate would have been ruling basically by the prestige of literary culture, enormously important in Chinese traditional society, and not by open dominance and force."

I did not mean, of course, that the ultimate sanction was not force, as in all societies which man has known. But one can hardly overestimate the significance of the radical absence of the aristocratic principle in traditional Chinese society through the ages. Broadly speaking, the aristocracy, such as it was, comprised merely the relatives of the reigning imperial house, and its members, kept rigidly under control and not allowed to enter the bureaucracy, were always under suspicion as possible contending figure-heads, and went altogether into oblivion when the dynasty changed. The last thing they were allowed was military command. It is a commonplace to refer to the old Chinese proverb about not using good iron to make nails and not expecting good men to become soldiers, but I believe that it represents something permanent in the Chinese scale of values. Here, of course, there is a tremendous contrast with Japan, where the feudal values were much more similar to those of military medieval Europe. It is true that China today takes great (and, indeed, legitimate) pride in the feats which were accomplished

in the Korean war, when the Chinese army stood up to the best-equipped Western troops which could be brought against them in a way that had not hitherto been known in the last three or four centuries of history. It was a very different story, indeed, from the Taku Forts, for instance, or anything that happened in the Opium Wars. Nevertheless, I consider that this classical predominance of the civil as against the military ethos will continue to give to Chinese society a basically pacific outlook for many centuries to come.

V. Organic Unity of Rulers and People

Certain traits in Chinese society are very persistent. Here I am not thinking of the quotations from the Confucian or Taoist classics, which many Chinese Marxist leaders often include in their writings, but all along the line one sees an emphasis on unification of and with the people. This is not a new thing; it existed in all the best ages in China. "Heaven sees as the people see; Heaven hears as the people hear."

For example, when I was in Peking in the summer of 1958, there was great enthusiasm about the dam which was being built in rapid time, largely by the voluntary labour of the citizens of the capital, to make a lake which would be valuable for the irrigation of the dry and dusty plain north of the city, and in which the Ming tombs would be mirrored. It was notable that Mao Tsê-Tung himself and the members of the Central Committee went out and, like most other people in Peking, did their day or two shovelling earth and doing other construction jobs. This was the symbolic blessing for a widespread movement during the past few years when great numbers of administrators have returned for a time to the farm and the bench to renew their experience of how it feels to be one of the working people. Indeed, I should not hesitate to regard these manifestations as the extended modern equivalents and lineal descendants of the ancient rite in which it was customary for each emperor and his ministers to plough the ceremonial furrows every year. One of the great annual ceremonies in the old days, this solemnity, carried out at the Temple of Agriculture in the south of the city, symbolized the organic unity of the Son of Heaven and his people before the powers of Nature. But in socialist China, the distinction between rulers and ruled has disappeared. "Every cook must learn to rule the State," and every administrator must remind himself periodically of how it feels to be cook and carpenter. The principle of unity which the sages and good officials of old understood is thus manifested as never before.

The converse of the respect entertained by the emperor for the people was the very deeply based respect for authority which throughout the ages was felt by them. The emperor was the Son of Heaven. He had a mandate from Heaven to rule "all under Heaven" (i.e., all China); but this was something very unlike the "divine right" of kings in Europe. The emperor's right was conditional. In ancient times he was held responsible in person for the prosperity of the country, in particular for securing the right sort of weather for agriculture. As high priest of a cosmic *numen* as well as king, he offered sacrifices on behalf of the whole people, securing the blessing of Heaven not only by them but also by himself behaving in the way which Heaven approved. By Heaven's mandate he ruled as long as his rule was good—but if it degenerated, natural

calamities such as flood and drought would come as warnings, and rebels would arise to claim the mandate. If there emerged a successful pretender to the throne, or a new and more powerful dynasty, it was always held that the previous imperial house had forfeited the mandate from Heaven by not behaving in the way appropriate to imperial rule. Thus the dual function of priest and king evoked in the Chinese people a very deeply based respect for authority. It generated the idea that a government is not simply a thing which has been created by a man, not something which has come about because one man is more powerful than another, but that it is part of a certain cosmic order. Such conceptions are surely close to modern Western thought about social evolution, trends of history, and revolutionary necessity based on concrete social forces.

VI. The Hydraulic Tradition and Public Works

There is another important feature in the social background of present-day China. One of the best-known theories about the origin of bureaucratic feudalism in China maintains that it was connected with the overwhelming importance of hydraulic engineering in ancient times. I believe there is a great deal in this opinion (though some of the loudest proponents of it can be remarkable tedious), and I found when I was in China during the war that a great many Chinese historians think so, too. The reason for the necessity of irrigation goes back to the geographical and indeed the geotectonic character of the country. The importance of irrigation canals for intensive agriculture, water conservancy for preventing floods, and canal transport for the gathering in of the tribute to the Imperial Court from the provinces, led to the establishment of a veritable tradition of great public works which is absolutely living in China today as much as it ever was in the Han or the Chhin or the Thang dynasties.

All this illustrates and symbolizes the tradition of great public works which exists in China and which is still in full vigour. In fact, the role of the Communist Party there, in putting the accent on great public works, is something which is much less new to Chinese society than it might be to any other nation in the world, except, perhaps, the Egyptians and the Sinhalese. Here, again, contemporary China is very much in line with the best and most brilliant dynastic periods of traditional China.

VII. The Tradition of Nationalized Production

Westerners should remember, moreover, that in China there is a very old tradition not only of great public works, but also of "nationalised production." People who are not familiar with Chinese history, or not very familiar with it, perhaps do not realize how ancient this is. It goes back at least to the —4th century, possibly to the —5th in proposal form, but it was actually enacted in —120, just before the time when the Old Silk Road began to carry caravans of Chinese produce, especially silk, to Persia and the West. Then, when we come to —81, we get that truly marvellous work, the *Yen Thieh Lun* (Discussions on Salt and Iron), still well worth reading today by anyone interested in economic history,¹⁰

¹⁰ A partial translation by E. M. Gale, *Discourses on Salt and Iron, a Debate on State Control of Commerce and Industry in Ancient China* (Leiden, 1931), exists, continued by E. M. Gale, P. A. Boodberg, and T. C. Lin in *Journ. Roy. Asiatic Soc.* (North China Branch), 65, 73 (1934).

which purports to be a verbatim account (it is not really so, of course, but it is not far off) of a great debate held about —83 between bureaucratic officials and feudal-minded Confucian scholars who were not convinced of the necessity for a powerful civil service. The point at issue was, of course, the “nationalization” of salt and iron. I am quite aware that the word “nationalization” must not be used with regard to these things with exactly the same meaning which we apply in speaking of nationalization in the modern sense. Yet it was definitely a take-over of the production of salt and iron by the State, and officials were put in charge of it. A number of Iron Bureaus were set up all over the country where iron was smelted and cast. Iron casting was already a well advanced technique in —2nd-century China, though not mastered until the +14th century in any other part of the world,¹¹ and the function of the Bureaus was to make cast-iron agricultural tools, such as hoes, spades, and ploughshares. At a later period in the Han there were further measures of nationalization, bringing under government control the making of wine and beer.

Thus national ownership of the means of production is something clearly in the traditional background of modern Chinese thinking, and although I have given Han examples, it is possible to get many others from later periods (e.g., the Sung) in the Middle Ages. Such conceptions of State control, therefore, are not for the Chinese daringly revolutionary, but rather a natural development arising out of their own history. Here is a very vital point in which Chinese attitudes differ from those of some Western peoples who have been so permeated by the conceptions of individual capitalist industrial enterprise during the past three hundred years.

It is not that enterprise is lacking. Much in China today reminds one of the parallel of the American frontier in the 19th century, the expanding opportunities of the Far West. This is now being repeated with all its implications for the development of the Central Asian parts of China, yet under the inspiration of socialist cooperative altruism, not of individual aggrandisement or money-making.

VIII. The Order of Precedence of the Estates

In connection with this question of State production, I should like to refer next to the traditional order of precedence of the estates of Chinese society. We need not call them classes; indeed, it may be very dangerous to do so without further thought. Most people probably know that famous phrase, *shih nung kung shang*, the four estates of society: the scholars, then the farmers, then the artisans, and finally the lowest “class” of all, the merchants. Assuredly this is one of those patterns which are always at the background of the Chinese mind.

This traditional proverbial phrase has been resounding down through the centuries ever since the end of the feudal period and the beginning of the unified Empire in the —3rd century. The low emphasis placed on merchants as well as the parallel low emphasis placed on soldiers is, I

¹¹ See *SCC*, Vol. 5, Part 1, and, in the meantime, J. Needham, “The Development of Iron and Steel Technology in China,” the Dickinson Memorial Lecture (London: Newcomen Society, 1958); or, more shortly, J. Needham, “Remarques relatives à l’Histoire de la Sidérurgie Chinoise” (with English translation) in “Actes du Colloques International ‘Le Fer à travers les Ages,’” Nancy, 1955, *Annales de l’Est*, No. 16 (1956).

think, quite significant for the instinctive mental attitude of the Chinese people at the present time. The ruin of Kuomintang China was quite naturally attributed to the nefarious activities of the banker-comprador-merchant group, and according to my experience, intellectual and university circles during the war were never in any way enamoured of the un-classical Kuomintang, with only very few exceptions. They were not at first sympathetic to the Communists either (I shall have more to say about that presently), but they certainly had no conviction that Kuomintang capitalism represented the natural line of evolution of Chinese culture. Perhaps it was the instinctive knowledge of the Kuomintang leaders that their economic system was profoundly un-Chinese which led them to talk so much about the feudal virtues, and to try to popularize forms of social asceticism such as the New Life Movement which assorted very oddly with the accumulation of great wealth in few hands. The paradoxical result could not avoid a strong impression of hypocrisy, and, in fact, only a very small percentage of the intellectuals were attracted by it.

The Kuomintang order was implicitly *shang shih kung nung*, and everyone could see that it was un-Chinese. The orthodox Communist order was obviously *kung nung shih shang*, and the Party under Mao Tsê-Tung saw at an early stage that this could not work either. The solution was found first in *nung kung shih shang* for immediate results, and in the total scrapping of all such distinctions for the long-term programme.

IX. The Mystique of Farming

Now, with the position of farming¹² we come to another point which illuminates, I think, more of the background of current thought in China. Farming was always recognized as fundamentally important; the farmers were anciently high up in the scale. They were the second in honour, ranking immediately after the scholars. Chinese culture has always embodied a deep love of the countryside, which, after all, did occupy 90 per cent of the people. A certain moral stature of the farming people, or the peasant farmers, if you like, is very marked in Chinese culture. Just as in Roman times there was a great *mystique* about the return of the senator or the consul to his birthplace, the return to the farm, the return to the soil, to till the fields again which his ancestors had tilled, so also this pattern is very much present in Chinese feeling, even in aesthetic appreciation. The theme of the *Kuei Thien Lu*, constantly recurring, is an example of it. So many poets wrote of a return to the country, a home-coming to the ancestral farm, a getting away from public life, a resigning of official appointments, the hanging up of official hats, and the retirement to the countryside.¹³ This is a very great feature of typical aesthetics throughout the ages. One must understand that the Communist Party in China derived a great deal of moral

¹² The classical book on Chinese agriculture in English is that of F. H. King, *Farmers of Forty Centuries* (London, 1927), but it should now be complemented by the admirable study of R. Dumont *Révolution dans la Campagne Chinoise* (Paris, 1957).

¹³ See, for example, the famous essay of Tao Yuan-Ming (+365 to +427) translated by H. A. Giles in his *Gems of Chinese Literature: Prose*, 2nd edition (Shanghai, 1923), p. 103. Cf. also his translation of Liu Yü-Hsi’s (+772 to +842) essay on the same theme p. 148.

stature from the very fact that it had lived "in the wilderness" (though this is not quite the right term, but in the country) with the peasants. In other words, it has had the attributes of a "country party" (though in a very different sense from the party of the same name in Australia). To be revolutionary and rural at one and the same time was a feat which could have succeeded only in China perhaps, and yet one which was essential for gaining and keeping the leadership there.

X. The Mystique of Manual Work

Closely allied to the classical admiration for farming there went throughout Chinese history an appreciation of the dignity of manual work. It may not have been the dominant tradition among the literati, but it was emphasized century after century by the poets. No doubt this is one reason why Tu Fu, Pai Chü-I, and other great classical poets are so appreciated in contemporary China, for time after time they praised the farmer, satirized the bureaucrat, and castigated the callous military officer. Perhaps this tendency was partly connected with the paramount necessity for some at least of the officials to have a good knowledge of water conservation, public works engineering, transportation techniques, and military technology. Abundant instances could be given, but it may suffice to mention a few outstanding names such as Chhao Tsho and Chang Jung in the Han, Yüwên Khai in the Sui, and Su Sung and Shen Kua in the Sung. Typical reforms periodically introduced, such as those of Wang An-Shih in the +11th century, made medicine, botany, geography, and hydraulic engineering parts of the imperial examination system. When Yen Yuan, an eminent scholar of the early Chhing period who had himself studied and practiced medicine, undertook in +1694 to establish a new type of education, he laid much emphasis on practical and technological subjects. The Chang Nan Shu Yuan, as it was called, had not only a gymnasium but also halls filled with machines for demonstration and practice, special rooms for mathematics and geography, and facilities for learning hydraulic engineering, architecture, agriculture, military arts, applied chemistry, and even pyrotechnics. But, of course, the contrary attitude of aloofness from manual and practical work was also very common in China, where the culture of the administrators was, after all, primarily literary.

All cultures and civilizations have suffered from the divorce of *theoria* and *praxis*. But the greatest thinkers, experimenters, and artists have always seen that only when the manual and the mental (or the intellectual) are combined in one individual's experience can mankind reach its highest stature. This combination has been of the highest importance in the history both of theoretical science and of technology; it gave weight to the materialist speculations of the pre-Socratics, it brought out the best in Aristotle, and it inspired the Renaissance engineers whose genius culminated in Leonardo. Men such as Palissy, Perrault, Papin, Stephenson, and Edison fill the subsequent centuries. Moreover, the combination not only brings true knowledge of Nature, but also deeper sympathy with those members of society whose contribution must still for some time to come be primarily manual.

There is no question that at the present time a great *mystique* of manual work has grown up in China. I believe that this is a true expression of the mass feeling of the people, guided, perhaps, by the party

leadership, but by no means something imposed from above. It was inevitable and necessary that it should happen some time if the Chinese people were to coalesce into a single, unified, and, as far as possible, classless society. There may be exaggerations in particular times and places due to excessive enthusiasm, but the movement is fundamentally sound. To think of manual work as a humiliating punishment in China is a lamentable misunderstanding propagated by certain Western writers.

Yet the present valuation of manual work in China, it should be emphasized, is but a passing phase. Such work is not regarded as an ultimate end in itself, but a means of bringing the intellectual and the non-manual worker into more fruitful relation with the material world, and giving them in the process better understanding of their fellow men. On the other hand, the farmers and workers greatly welcome this opportunity of personal contact. Meanwhile, every form of mechanization is being pushed ahead as fast as possible. At the Ming Tombs Reservoir Dam in the summer of 1958 there were bulldozers, graders, and an elaborate earth-fill supply system of railways, both standard gauge and narrow. But the voluntary participation of hundreds of thousands of ordinary citizens of Peking was meant to be a demonstration of their solidarity with the whole working people, as well as an expression of determination to get on with the job of re-creating their vast country. In Szechuan a moving remark was made to me by a Chinese friend who pointed to the children on the pavement watching the hauliers working their great loaded carts up the hills, and said, "With the truck production rate the way it is now, or better, when those boys grow up they'll never have to do that back-breaking work—it will be altogether a thing of the past!"

XI. Morality and Machiavellianism

Before leaving altogether the subject of the civil service, we might consider for a moment what some people call tough-minded realism and others Machiavellianism. A curious paradox occurred recently. A scholar of Columbia University has written an interesting, but in my opinion perverse, book on the history of the bureaucratic-feudal civil service in Asian countries.¹⁴ Intending to delineate the characteristics and origins of hydraulic bureaucratic feudalism in many different parts of the world, he seeks to refer back to it all the most unlovely manifestations of State power and coercion in modern societies. Omitting all reference to such phenomena as city-state tyranny or oligarchic dictatorship, to Byzantine autocracy, absolute monarchy, or imperialism, to the Holy Inquisition, or to the fascist forms of developed capitalism, he fixes (most unjustly) upon Asian bureaucratic feudalism as the completest type of tyranny and upon Chinese "oriental despotism" as the most perfect example of it. The facts disagree radically with his general view, but no matter. To make the readers' flesh creep, he quoted a good deal from the *Arthashastra*, that great Indian work of the +2nd century on Machiavellian power-politics. It was quite striking that although his chief fire was directed against the Chinese mandarin, he was not able to find

¹⁴ K. A. Wittfogel, *Oriental Despotism* (New Haven: Yale University Press, 1957).

for his purpose any parallel to this work in Chinese literature. And, indeed, there is no parallel to it.¹⁵

What the full explanation of this may be is uncertain—perhaps the analogous texts of the Warring States period have not come down to us—but it is certainly true that Confucian sentiment would always have been very much against any such codification of amoral power techniques as one finds in the *Arthasastra*, with its plain-spoken and even enthusiastic advocacy of the poisoning and torture of opponents, or the use of spies, saboteurs, ambushes, and all kinds of stratagems.

This raises the question of how much hypocrisy there was in Chinese history. No doubt a good deal, as in the history of all nations, but perhaps less than one would think because throughout the ages the best of scholars were deeply and honestly attached to the high morality of Confucianism. Certainly all the poets emphasized it, and in China many of the greatest poets were officials themselves. After all, there were standard techniques for managing people, if one might so put it, such as gifts of various kinds, reciprocal obligations, customary honours, and so on. Besides, as has been mentioned already, the art of persuasion was of age-old cultivation in Chinese life. It may be that such characteristics originate from special but fortuitous technological features at early stages when a civilization is crystallizing. The eminent sinologist, H. G. Creel, pointed out long ago¹⁶ that in feudal Chou China the lords were poorly provided with defensive armor while the commoners were familiar with a powerful weapon, the cross-bow, long ere Europe had it. Hence propaganda and indoctrination were raised to a high level as social techniques, as indeed is abundantly evident from many places in the Chinese classics. Again, as perhaps would be expected in a non-industrialized society, austerity of life was blessed by Confucian ethical authority. Of course, there were many exceptions, rulers who delighted in extreme luxury, etc., but they usually came to a bad end, as the Bureau of Historiography never failed to point out. Broadly speaking, the needs even of the high officials were always comparatively simple. All this throws light on the present situation. The Chinese spirit does not admire unprincipled tactics, dishonest dealing, or personal luxury. Behavior of a competitive or acquisitive character is not considered worthy of the magnanimous man (*chiin tzu*), whose place is with the people, like the leaders of the “bandits” of Liangshan, leading from within, not from above.

XII. The Mandarinate and Public Opinion

Sometimes it is said that in medieval China there was no such thing as a public opinion. I am well satisfied that this is a wholly mistaken idea. The scholar-gentry, and especially those who were in office in the civil

¹⁵ Partial parallels may be found in the Fa Chia literature of the -4th and -3rd centuries (the School of Legalists, cf. *SCC*, Vol. 2, pp. 204ff.), and the use of spies is recommended in the -4th-century military classic *Sun Tzu Ping Fa* (Master Sun's Art of War), cf. L. Giles' translation (London, 1910), pp. 160ff.; but there is nothing approaching the cold-blooded systematization of the *Arthasastra*. The handiest translation of the latter is by R. Shamasastry (Mysore, 1929).

¹⁶ H. G. Creel, *La Naissance de la Chine* (Paris, 1937), pp. 344ff. His argument is abundantly supported by ancient Chinese texts, e.g., *Analec*s, XIII, xax; *Huai Nan Tzu*, chap. 15, translated by E. Morgan in *Tao the Great Luminant* (Shanghai, 1933), pp. 186, 192ff.

service, in the mandarinate, the *kuan liao* people, were extremely influential, and persuasion was their characteristic method. Sometimes they succeeded in gaining the attention and capturing the good will of an emperor for many years, and in other cases, where for one reason or another, the emperor “got across” his civil service, then there were many things which could not happen because the civil service or mandarinate would not give way. It was immensely tied to age-old custom and there were many things on which it refused to compromise. One might mention in passing the institution of the censorate, the *yü shih* or *yü shih pu*, which originally grew up as one of the departments of State, and was in its heyday concerned with the control or verification, to use a French phrase, of the functioning of the civil service at the periphery, in the provinces. Many a tale and many an opera theme in old China concerned the actions of censors in bringing abuses to book at great personal risk, and there are many historical instances of the execution or exile of one remonstrator after another failing to silence the protests of the scholars. Thus the literati in the civil service at any particular time, and especially, of course, those at the capital, did constitute a public opinion of a wide and educated character, and this was generally not at all insensitive to the opinions of the mass of the common people.¹⁷

XIII. Social Cohesion: Family, Merchant Guild, Peasant Community, and Secret Society

I am still not able to leave the sociological field because something must be said about the traditions of social cohesion in China. This is a fundamentally important aspect of life and thought in any culture. The first thing one must mention is the institution of the large family.¹⁸ There is no doubt that although during the last 100 years the really large family has been steadily dying out, yet in ancient and medieval times it was a very important reality. Many things were connected with it—that Confucian tradition, for example, which so much disapproved of jealousy; that profound courtesy which was the ideal aim of all occasions; and the phenomenon of “face-saving,” which sprang from a desire to spare embarrassment to others.¹⁹ All this will be rather obvious, I think, to anyone who has read any Chinese literature. The cohesion of a large family depended on forbearance. One of the emperors enquired of an old gentleman who was brought to him as having attained the great aim of the large family, “five generations in one hall,” how it was done and how his family had been so successful. He said, “It was just forbearance.” The emperor asked again and said, “It must be something more than that.” But the aged man wouldn't add anything more except that it was all a matter of forbearance, one for the other. I often have occasion to quote from an old man who wrote a book about Hangchow in +1235. He never signed his name to it but called himself the *Kuan pu nai tê ong*: “the old gentleman of the irrigated garden who attained (peace) through forbearance.”

¹⁷ See, for example, C. P. Fitzgerald's study of the bureaucracy under the Thang empress Wu Hou, *The Empress Wu* (London, 1956); or J. T. C. Liu, “An Early Sung Reformer: Fan Chung-Yen,” in J. K. Fairbank, ed., *Chinese Thought and Institutions* (Chicago: University of Chicago Press, 1957), p. 105.

¹⁸ Cf., e.g., Hsü Lang-Kuang in *Amer. Journ. Sociol.*, 48, 555 (1943).

¹⁹ Cf., e.g., Hu Hsien-Chin in *Amer. Anthropologist*, 46, 45 (1944).

In 1958 I travelled some 12,000 miles within the country, by road and plane as well as by train, gathering further material for our work on the history of science and technology in the Chinese culture-area, and meeting hundreds not only of scientists and scholars, but all sorts and conditions of men. My most outstanding impression was the unreality of the idea so cherished in the West that the population is dragooned to perform its tasks. On the contrary, everywhere one sees cooperation, spontaneity (sometimes outrunning government planning), enthusiasm for increasing production and modernization, pride in an ancient culture equipping itself to take its rightful place in the modern world. What has been done in public health, social services, industrial development, and advancing amenities of all kinds, and what one sees going on under one's eyes, would be absolutely impossible without the willing and convinced cooperation and social cohesion of all age-groups and all types of workers, manual and intellectual. A new type of social engineering, the product of leadership from within, not from above, raises up movements as urgent popular demands and not as any mechanical result of drives from the central government.

The carry-over of the large-family ethos into spontaneous working groups was also observable during the formation of the Chinese Industrial Cooperatives during the Second World War.²⁰ It happened that I was closely acquainted with much of that work. During the great *diaspora* when the Chinese were leaving the coastal districts to the tender mercies of the Japanese and were coming over in millions to the western provinces, one found a flotsam and jetsam of artisans from all over the country meeting together and almost spontaneously setting up productive cooperatives—paper-makers, shoemakers, foundry workers, and so on. I knew them in many cities, but particularly at Paochi in Shensi. There you could not help feeling that the large-family mentality was at work; they formed rather tight groups which cooperated effectively and ran their businesses often under very considerable difficulties, even in the face of opposition by the Kuomintang government in the later phases of the war.

When we come to the relationship of merchants to one another, it is generally known that China did have merchant "guilds."²¹ But the merchant guilds in China never acquired anything like the importance in society of the merchant guilds in the West, never became powerful

²⁰ An interesting account of years of work with the Chinese Industrial Cooperatives is given by P. Townsend in his *China Phoenix* (London, 1956). Precious reminiscences by one who was described as their "founder, spark-plug and mainstay," Rewi Alley, are contained in his books *Yo Banfa* (Shanghai, 1952, and Peking, 1955), and *The People have Strength* (Peking, 1954), and are represented also in his poems, collected, for example, in *Gung Ho* (Christchurch, N.Z., 1948). Experiences as a Cooperative Organizer in a very remote part of China are related by P. Goullart in *Forgotten Kingdom* (London, 1955). The magnificent work of the C.I.C. technical training colleges was described in *Training Rural Leaders: the Shantan Bailie School, Kansu Province China*, published by the F.A.O. (Washington, D.C., 1949). Today these colleges are incorporated in a nation-wide system inspired by the same ideas of public service and retaining much of the original method, while the general conception of rural industrialization on a cooperative basis has become an accepted and integral part of the whole vast re-organization of Chinese society into rational units which combine agricultural with industrial activities.

²¹ The standard reference is H. B. Morse, *The Guilds of China, with an Account of the Guild Merchant or Co-Hong of Canton*, 2nd edition (Shanghai, 1932), but the subject needs fuller study.

in State government, never encroached, one might say, upon the power of the imperial bureaucratic administration. The mandarin saw to it that they did not, and as will later be suggested, we have here a good clue to the failure of late Chinese society to generate any Renaissance, and ultimately of its failure to originate *modern* science. In fact, we do not find any conception of the city-state in China. The old expressions "Stadtluft macht frei" (The very air of a city makes a man free from feudal service) or "bürgerliche Rechtsicherheit" (Security of city folk under the law) are meaningless where China is concerned. The city in China was always essentially a node in the administrative network of the Empire, and the whole conception of "aldermen" or "masters of guilds" running the city in an independent way, often in the teeth of opposition from local feudal lords, and often allied to the royal power—all that kind of thing was unheard-of and unknown in China. Sir John Pratt made an interesting and amusing contribution when in one of his books he recalled how in 1862 some of the Western European businessmen established in Shanghai, one of the treaty ports, petitioned the Government in Peking for a grant of a city charter.²² The perplexity which this caused at the imperial court in Peking must have been extraordinary, because no one there would have had the faintest idea as to what they wanted, or had ever heard of a such a thing being granted to any body of merchants. But all this does not alter the fact that mutual aid occurred in plenty. The Chinese merchant guilds certainly engaged vigorously in helping their members. At Chhangting in Fukien I once had the pleasure of staying in one of the beautiful old-style hostel buildings with courtyards and elegantly carved halls and pavilions which were put up in different cities for the reception of merchants from other provinces when they came there to buy and sell. We thus have another aspect of social cohesion in the merchant guilds even though they never became important politically, as in Europe.

Another aspect of Chinese life which should not be underestimated is the great extent to which mutual aid took place among the peasant farmers. Throughout the ages there was cooperation at the village level, sometimes more, no doubt, and sometimes less.²³ Mutual aid teams were not something absolutely new and unheard of when they were encouraged at the beginning of the present government. In medieval times the affairs of the village were largely left alone by the administrative officials of the county town; as long as the *hsiang chang* came up with the right amount of taxes and fulfilled the demands of the *corvée* or military conscription service, he was free to consult with the clan elders on all matters of land utilization, road and bridge repairs, and other communal questions. I am not trying to idealize the picture or to minimise the extent of thoroughly bad government, rapacious landlords, and rich peasants at different times in Chinese history—only to emphasize that in the better times, at least, mutual aid in the community was a firm reality.

²² J. T. Pratt, *The Expansion of Europe into the Far East* (London, 1947), p. 17.

²³ Cf. Tsu Yu-Yüeh, "The Spirit of Chinese Philanthropy: a Study in Mutual Aid," *Columbia University Studies in History, Economics and Public Law*, 1912, No. 125 (Vol. 50, No. 1); and more recently, Yang Lien-Shêng on reciprocity, "The Concept of Pao as a Basis for Social Relations in China," in J. K. Fairbank, ed., *Chinese Thought and Institutions* (Chicago: University of Chicago Press, 1957), p. 291.

Apart from all this we must not forget to take into account quite another side of the medal—that is, the high degree of cohesion within voluntary and what indeed may be called subversive organizations. Apart from the committees of village and clan elders in different times and places, apart from the old open Taoist or Buddhist societies which engaged in compassionate enterprises like bridge-building and road construction, there were also throughout Chinese history the secret societies.

The importance of these can hardly be over-estimated, for a powerful degree of social cohesion was characteristic of them. Even in our own time no foreigner could live long in China without coming in contact with these societies.²⁴ Although I personally had no intimate knowledge of them, anyone could sense the strength of the bonds which they could imply, as in the White Lotus Sect, the Szechuanese *Ko Lao Hui*, or the Triad Society. Even during the second World War there were secret associations of truck drivers like the *Hung Pang* and the *Chhing Pang*, believed to have descended from pilots' associations on the Grand Canal, and all of us who had to do with trucks came into contact with them. I am not saying that all this was a very desirable phenomenon. Everyone knows that overseas in Southeast Asia these secret societies, which readily succumb to pure gangsterism, have been the cause of a great deal of trouble, and there is little to be said for them. But in traditional Chinese society, in the set-up which we have already discussed—an apparent autocracy but, in fact, a government by custom and compromise, where the Confucian tradition kept things sweet up to a certain point, but where things were liable to go wrong when exceptionally greedy officials arose or when there was a general decay of society, as happened periodically towards the end of dynasties—there one can see the importance of the people's cohesion in the secret societies. Undoubtedly they played an extremely important part in Chinese life.

They were, indeed, closely associated with that great series of popular rebellions which runs throughout Chinese history.²⁵ Generally these movements arose in their might at the end of effete or tyrannical dynasties: such was the uprising of Huang Chao against the Thang (+874 to +884) on the one hand, or that of Chhen Shêng (—209)

²⁴ There is no adequate and systematic treatment of the subject of Chinese secret societies, but one may mention W. Stanton's *The Triad Society or Heaven-and-Earth Association* (Hongkong, 1900); J. S. M. Ward and W. G. Stirling, *The Hung Society*, 3 volumes (London, 1925); B. Favre, *Les Sociétés Secrètes en Chine* (Paris, 1933); C. Glick and Hung Shêng-Hua, *Swords of Silence* (New York, 1947); L. Comber, *Secret Societies in Malaya* (New York, 1958); and the extraordinary compilation of M. L. Wynne, *Triad and Tabut* (Singapore, 1941). The Western Literature on Chinese secret societies has a peculiar character in which everything is seen as through a glass darkly. This is not surprising, since it constitutes a kind of nightmare folklorism largely based on the depositions of illiterate Chinese working-men to sinologically incompetent police officials. The few books written by capable sinologists have all long been out-dated by the progress of knowledge in Asian studies, but they are still worth reading. I refer to G. Schlegel's *Thian Ti Hwui: the Hung League or Heaven-and-Earth League* (Batavia, 1866), photolitho reproduction (Singapore, 1956); J. J. M. de Groot, *Het Kongsiwezen van Borneo* ('s-Gravenhage, 1885). P. Pelliot's devastating review of Ward and Stirling remains true, alas, to this day (*T'oung Pao*, 25, 444, 1928).

²⁵ All histories of China deal with these, whether as large as Cordier's or as concise as Goodrich's. But the special attention given to them is one of the interesting features of *An Outline History of China* (Peking: Foreign Languages Press, 1958). A brief treatment worth reading is that of H. Franke, *Geschichte in Wissenschaft und Unterricht*, 1, 31 (1951), part of his inaugural lecture at Cologne.

against the Chhin on the other. In such circumstances the reigning house with all its hangers-on was usually overthrown, and replaced by a new one emanating from some suitable personality on the rebel side, a new house destined no doubt to accomplish in due course a similar cycle but endowed with a century or two of fresh vigour and good government. Thus the founder of the Han, Liu Pang, was one of the leaders of the revolt against the Chhin, and Chu Yuan-Chang, 1500 years later the founder of the Ming, had long been in revolt against the Mongol dynasty of the Yuan. Sometimes, however, a great rebellion would occur "prematurely" and succeed only in weakening the dynasty so that it fell not long afterwards—such was the situation with the Taoist Yellow Turban Rebellion of +184 and the semi-Christian Thai-Phing Revolution (+1851 to +1864). This last "State within a State" was perhaps the greatest revolutionary commonwealth in Chinese history, and is regarded with much pride by contemporary Chinese scholarship, which has devoted deep study to its analysis. In recent years its banners have hung, as if in a Westminster Abbey, in the Great Hall above the Wu Mên gate of the Imperial Palace at Peking.

The bitterness of these class struggles was very great, and a landlord general such as Wu San-Kuei in +1640 could prefer to join with the Manchu foreigners rather than sink his differences with the successful peasant leader Li Tzu-Chêng. Modern Chinese historians are giving particular attention to the study of these rebellions and to the secret societies, often Taoist or Buddhist in affiliation (since Confucianism was so closely associated with the scholar-gentry), which organized and inspired them. It is as if a revolutionary Germany should trace with loving admiration the exploits of the Anabaptists, or a progressive England commemorate the places where the Levellers and the Diggers performed their historic actions. But while in Europe many of these movements could flourish openly, Chinese society was generally so unified that the oppressed groups had to have recourse to secrecy, establishing an underground resistance pattern which transmitted century after century a tradition of social solidarity.

The lesson for us in all this is that the many examples of extreme individualism among Chinese scholars and thinkers, upon which Western sinologists have so delighted to expatiate, have given a certain distortion to our conception of the Chinese people. The much-advertised eccentric solitaires have, I think, blinded us somewhat to the more essential and deep-rooted cohesive factors in Chinese society. What this clearly leads up to is the cohesiveness of the present time. It forms the indispensable historical background for the mutual aid groups in villages which led on to those cooperative forms of agriculture covering already by 1957 more than 90 per cent of the country, and to the large-scale communes which originated during the latter part of 1958. Rural communist China was not created in a day. The problem was how to capture those Artesian depths of a social solidarity emotion which had been one of the main motivating forces of Chinese society for two millennia. No mere nationalism could ever have done this—only a doctrine which could fully evoke that mixture of enlightened self-interest and concern for the happiness of one's neighbour which had welded together the "black-haired people" indissolubly in a hundred battles against the feudal

bureaucrats. The cooperatives and communes are only extensions, I believe, of certain cohesive features in Chinese society which have been developing all through the ages.

As for the new venture of the *jen min kung shê* (translated rather riskily as "communes"),²⁶ this development was only just starting when I was last in China, but I conceive it to be primarily an extension of the system of cooperative production which could be seen at work everywhere there. Deeply in accord with old Chinese social traditions, this principle is, I believe, welcomed and accepted by the overwhelming majority of Chinese working people. Current criticism of the "communes" seems to rest, often enough, on limitations of outlook characteristic of highly industrialized Western societies. People there who dislike the idea of families eating in restaurants and canteens know only Western homes provided with gas stoves, electric washing machines, etc. If they had had any experience of the slavery of the Chinese women throughout the ages to the charcoal or brushwood stove and the primitive water supply, they would understand that the cooperative farm or works restaurant and the public baths today seem more like a heaven on earth to millions. Until recently only the very largest cities had piped gas, running water, and main drainage. Side by side with these improvements an immense effort of re-housing is under way. Emancipation of women to follow careers, whether on the farm, railway, or in the factory, or in intellectual work, is one of the most remarkable features of present-day China, as I know from personal contacts with many friends all over the country. Nor am I particularly shocked by the idea of restaurants where one does not have to pay, having enjoyed many a meal under such conditions in the Kibbutzim of Israel as well as in the educational institutions of my own country. This is a matter of pride in China today, not of compulsion or regimentation—the direct reward of the successes of agricultural production.

XIV. Elements of Democracy

Lastly, a word or two about "democracy." Most Europeans who have lived in China will agree that although the celebrated Greek origins were no part of the Chinese inheritance, there is a vein of instinctive democracy running very deeply through the culture. The almost complete absence of special "built-in" forms of linguistic address between superiors and inferiors (so sharply contrasting with Japanese), the age-old recognition of intellectual capacity absolutely irrespective of birth, the profound humanism of Confucian ethics, and the classical acknowledgment of the human dignity of the farmer and the artisan, all illumine a living experience of contacts with and among Chinese people. It will not be forgotten, moreover, that the right and duty of "rebellion against un-Confucian princes" was a leading tenet of the chief school of Chinese social philosophy for nearly two millennia before the parallel doctrine in Europe received the blessing of the Reformers. One may conclude, I think, that although traditional China had no institutions which we could call "representative" democracy in the Western sense, it was certainly not, as some have thought, a sheer autocracy. It was a highly constitu-

²⁶ Cf. A. L. Strong, *The Rise of the Chinese People's Communes* (Peking, 1959).

tional empire, if with an unwritten constitution, and governed profoundly by custom. The representative institution as such is new in China, the elections for membership of State assemblies, for governors of cities, or mayors, as they now call them. Yet a very powerful element of democracy was, I am convinced, present in traditional China.

Many Western observers of contemporary China appear to be haunted by an impression of imposed "uniformity" in current Chinese life. They seem to entertain some nightmare conception of male and female prison-barracks inhabited by robots with identical responses.²⁷ I believe this to be quite illusory, corresponding to nothing in my experience of Chinese modern working-class housing, or of the working people themselves. What I can see happening is more like this: when people accustomed to eating meat once a year find themselves able to have it once a week, it is not surprising that they all react in the same way. When people who for generations have hauled barrows groaning over mountain ways, or tracked junks upstream against the Yangtze's current, see for the first time engines coming to their rescue, their reactions tend to be uniform. When scientists who formerly had to waste their best years in empty laboratories feel the support of big financial backing and popular encouragement, their new inspiration takes almost identical shape. These are the deepest "uniformities" that I can see in China today.

At the same time, it is quite true that the Chinese have adopted wholeheartedly a particular political philosophy, and there is undoubtedly a great deal of social influence on individuals to accept it, but there is much latitude in interpretation. The learned and technical journals, for example, are full of lively controversial articles. Wall newspapers give great opportunity for the expression of criticism on the part of the rank and file in every institution. Moreover, extreme care is taken to foster all kinds of new ideas arising among the mass of the people, and to encourage originality. It was very moving to see in Chinese cities in July of 1958 the processions and the rejoicings in honor of local inventors and innovators. "Kan hsiang, kan shuo, kan tso!" (Dare to think, dare to speak, dare to act) was the watchword painted on every city and temple wall in China that summer—this does not seem to me the kind of slogan which one would expect in a dictatorial authoritarianism.

²⁷ Here the official Chinese translators of current Chinese Government information services and bulletins have been somewhat at fault. Knowing probably only the American connotation of the word "dormitory," i.e., a building containing a number of small "apartments" (or, in English usage, "flats"), they have succeeded in giving to Europeans the somewhat bizarre impression that large sections of the Chinese working-class had been induced to abandon family life and to sleep in segregated halls housing as many beds as hospital wards or the "dormitories" of English "public schools."

Part II

I. Confucian Morality and Taoist Social Protest

LET US NOW TURN to the consideration of certain matters more on the philosophical and ethical plane. Of course, we have already touched upon some aspects of ethics, but we need to put this in its correct perspective by recognizing the existence of an essential wallpaper of the Chinese mind today and for the foreseeable future—the background of Confucianism and Taoism. I say this with the parallel in mind that however revolutionary any European, for example, may be, he will have as the inevitable background to his mind the social righteousness of Israel, the subtleties of Greek philosophy, and the logic of Roman law, three elements all embodied in the Christian Church and the Holy Roman Empire. These fundamental conditioners of thought cannot be deleted from the European past.

We have already said a word or two about the moral austerity of ancient or classical Confucianism, which was essentially a system of ethics and not in any way a metaphysic.¹ The Confucian ideal was a state of social justice insofar as this could be conceived of within the framework of the feudalism of Master Khung's own time (the —6th century). Its conservatism arose from the fact that the relation of prince and minister or master and servant was included among those five human relationships which Confucius invested with particular sanctity. But the idea that every person exists in a kind of concrete special functional relationship with every other person in society is one which is capable of perpetual renovation; loyalty to superior officers is needed in a Red as well as in any other Army, and filial piety must necessarily appear in new forms when family allowances or full old-age pensions and suitable new State-provided modes of life for the aged come into general acceptance.

Confucianism was a religion, too, if you define that as something which involves the sense of the holy, for a quality of the numinous is very present in Confucian temples (the Wên Miao); but not if you think of religion only as theology of a transcendent creator-deity. The emphasis of Confucianism, of course, was always on duties rather than rights, and this again is familiar in modern as well as in traditional Chinese society. There has been little change in that respect. In the past Confucianism tended a good deal towards asceticism and even a certain

¹ For a more detailed account, see *Science and Civilisation in China*, Vol. 2 (in course of publication in seven volumes by the Cambridge University Press), pp. 3ff. Hereinafter abbreviated as SCC.

prudery, and these ancient presences can be felt very much among the communists of today and in their social attitudes.

But the Taoists are immortal as well. The ancient Taoist philosophers were men who made a powerful social protest against the feudal society of their time.² They refused to co-operate with it. The famous expression *Chün hu! mu hu!* of Chuang Chou, for instance, in the —4th century, when he says, "Princes, indeed! Grooms to be sure!", in other words, those who know only the distinctions between princes and grooms, how you should salute one and how you should salute the other, we spew them out of our mouths. This is not true knowledge. We believe in obtaining a real knowledge of Nature and a real understanding of the ceaselessly changing universe. We retire from human society, we walk outside human society, we resort to the mountains and forests, we contemplate Nature, we cultivate our receptivity, and we teach abstention from all force and coercion. "Production without possession, action without self-assertion, development without domination."³ And there they were in their hermitages and abbeys all through history, refusing to cooperate in the bureaucratic-feudal society.

That element of Taoist renunciation, and that element of Confucian asceticism, neither of them springing from any supernaturalism but in the interests of high morality, are very powerful indeed at the present time. The vein of puritanism, in fact, in modern China is not at all new. It is something which has been there all through the ages. It has reminded some observers of the Ironside spirit in 17th-century revolutionary England, with the age-old humanistic moral conviction of Master Khung taking the place of that of the prophets of Israel's god of righteousness. The reforming of the old decayed society and the assertion of moral values, if no doubt occasionally carried to rather absurd lengths, is thus not a new development, but a restoration of something exceedingly old. In fact, I should go so far as to say that although neither Confucianism nor Taoism, in spite of some appearances, ever involved the conception of a creator or an omnipotent transcendent deity in the usual sense, they were wholly devoted, each in their diametrically opposite way, to bringing about what in early Christian terms would be called the "Kingdom of God on Earth."

It has been instructive in recent years to see the reassessment of the ancient philosophers going on. When I was in China in 1952, it was interesting to see that only three individual characters were emphasized in the magnificent teaching exhibition of archaeology and history from the Bronze Age onwards which was established in the Imperial Palace Museum, the Ku Kung Po Wu Kuan at Peking. Two were Mo Ti, the —4th century philosopher of universal love, and Hsimên Pao, the great hydraulic engineer and humanitarian of the —6th century. This latter official is remembered not only for having built some of the earliest dams and reservoirs, but also, according to a story which is not at all historical, for having ended the sacrifice of girls to the god of the Yellow River. So

² For a more detailed account, see SCC, Vol. 2, pp. 33 ff., and especially pp. 86 ff., 100 ff.

³ These words, brilliantly summarizing much of the essence of the *Tao Tê Ching*, were quoted by Bertrand Russell in *The Problem of China* (London, 1922), p. 194, but I do not know from where he derived them.

he was a humanitarian and a hydraulic engineer at the same time. The third hero emphasized was Kungshu Phan, or Lu Pan, the great artisan and patron saint of artisans. But when I went back six years later I found that, while the three heroes were still there, Confucius, Mencius, and even Hsün Chhing, as well as most of the other classical philosophers, had been added, emphasis being laid on Confucius chiefly as an educator. All of them are now well represented and described with suitable exhibits.

A great debate is always going on, of course, as to how far Confucius himself was a revolutionary. There is no doubt that he was in the field of education, for he did away with the ancient idea that noble birth was an indispensable requirement. He was prepared to educate anyone who was capable of receiving it. This was how he became the patron saint of the bureaucracy, for all the posts needed officials and the Confucian education was the most suitable for them. But the question is more complex than this, for it turns on the extent to which Confucius was consciously opposed to the whole system of bronze-age proto-feudalism, and in favour of more collectivist forms. There is, at any rate, no doubt that some of his recorded actions indicate this, and that some of his descendants played a part in those popular rebellions of which we have already spoken. A strong case for the politically democratic character of Confucius has been made out by the sinologist H. G. Creel in a fascinating, if somewhat controversial, study.⁴ Actually, Kuo Mo-Jo himself, the great archaeologist and ancient historian who is now president of the Chinese National Academy of Sciences, has gone on record quite a number of times for what one might call the progressive view of Confucius as opposed to the other view, held, of course, by many Chinese Marxists, that he was nothing but a reactionary of deepest dye. It was natural that they should think so, for in modern times and under the Kuomintang, many landowners and traditionalists of all sorts upheld Confucianism as one of the conservative institutions they wished to defend.

The reader may complain if no word is said about Buddhism. In my opinion (and again this is a personal one), it never played anything like the same part in China as the two indigenous doctrines. It is very curious that, although philosophically "other-worldly," for economic reasons it came to be allied with peasant struggles, and in some periods at least as much so as the Taoists. But presumably because of its emphasis on compassion, the *karuna* aspect of Buddhism, alongside that of emptiness (*sunya*), it was very important and early in the field with regard to the establishment of hospitals, orphanages, and similar institutions. It has certainly not been without influence on modern reformers and revolutionaries.

II. Neo-Confucianism and Dialectical Organicism

When we pass from the ethical to the metaphysical, a number of points arise which are of as great if not greater importance than anything yet said. The school to which I particularly want to draw attention is the Hsing Li Hsüeh Chia, creators of the great scholastic synthesis of the

⁴ *Confucius, the Man and the Myth*, (New York, 1949; London, 1951).

+11th and +12th centuries.⁵ The greatest representative of the Neo-Confucian school was Chu Hsi, who was born in +1131 and lived throughout the rest of the century. The earliest was Chou Tun-I, born in +1017, and three other great names come in between. It is highly characteristic of their philosophical position that Chu Hsi has been termed both the Herbert Spencer and the Thomas Aquinas of China.

What may have been an important factor in the rallying of the Chinese intellectuals to the communist point of view is the fact that Neo-Confucianism was closely related to dialectical materialism. In other words, this system of thought, which was really the culmination of Chinese philosophical speculation throughout the ages, was a materialism, but it was not a mechanical materialism. It was, in fact, an organic conception of Nature, a theory of integrative levels, an organic naturalism,⁶ having nothing to do with an external transcendent creator-deity or supernatural being of any sort, but at the same time leaving all possible room for man's highest experiences, highest indeed of the successive levels of organization and integration in the world of Nature. It was thus essentially not dualistic. It was, if you like, holist. It was therefore closely allied to the conceptions of dialectical materialism, which is also a materialism but not a mechanical one, and pictures a dialectic in Nature such that contradictions are constructively resolved at a series of integrative levels (plant, animal, social, etc.); the series of the *scala naturae*, in fact, with all the transitions between its stages.

The Neo-Confucian school operated with two fundamental conceptions, *chhi* and *li*. *Chhi* originally meant something rather like the Greek *pneuma*, a vapour, something like a gas or an emanation, but by the Sung it had come to mean all matter, the grossest as well as the most tenuous. As someone recently pointed out very acutely, it is rather remarkable that *pneuma* became more and more rarefied in Europe as the centuries wore on, while *chhi*, on the other hand, became more and more material. This must be connected with the characteristic Chinese love of pragmatic concreteness. As for *li*, the word began by meaning a way of cutting jade according to its natural pattern, and eventually come to mean essentially all structure in Nature itself—"natural organic pattern." These words are absolutely not translatable by Aristotelian matter and form; they have at first sight some similarity with those concepts, but at bottom they are not at all similar. Then there are many other important technical terms, like *chhêng*, for example, which some people translate as "sincerity." I have a fixed conviction that it ought rather to be rendered the "precise fulfilment of an organic function."

⁵ A detailed account is given in *SCC*, Vol. 2, pp. 455 ff. Such recent publications as Chou I-Chhing's *La Philosophie Morale dans le Néo-Confucianisme* (Paris, 1954), and A. C. Graham's *Two Chinese Philosophers* (London, 1958) are well worth study.

⁶ Exactly what I mean here has been set forth, with documentation, in earlier publications; see especially my Herbert Spencer Lecture at Oxford University, *Integrative Levels, a Reevaluation of the Idea of Progress* (1937), especially page 40; reprinted in *Time, the Refreshing River* (London, 1943), in which see especially pp. 184 ff., 233 ff. The relevance of organic naturalism (as in Whitehead, Sellars, Smuts, Lloyd-Morgan, etc.) to dialectical materialism, indeed a close logical relationship, may be found further in J. Lindsay, *Marxism and Contemporary Science* (London, 1949), especially pp. 70 ff. The most recent world picture in this tradition, drawn, however, neither by a professional philosopher nor by a marxist theoretician, but by a brilliant and unorthodox Jesuit, is *The Phenomenon of Man* by J. Teilhard de Chardin. Fr. Teilhard de Chardin spent many years of his life in China.

with all that that implies. Among the most profound of Neo-Confucian ideas is that embodied in the famous phrase *wu chi erh thai chi*, "that which has no Pole and yet itself is the supreme Pole," namely, the conception of the whole universe as an organic unity, in fact, as a single organism.⁷

III. European Schizophrenia and Chinese Unitariness

In all this one might think that we were getting far away from contemporary China. Not at all. The enthusiastic acceptance of dialectical materialism in China is regarded by many Westerners as a great mystery. They marvel that such a people could have accepted what at first sight might seem so European with alacrity and conviction. Yet I can almost imagine Chinese scholars saying to themselves, "How astonishing; this is very like our own *philosophia perennis* integrated with modern science and at last come home to us."

It is important to notice how deeply opposed is this non-dualistic, organic conception of the universe to what I intend in due course to call, adopting a phrase from Lancelot L. Whyte,⁸ the "European dissociation." By this I mean that confused dance in which Europeans have engaged from the earliest times, oscillating between theological spiritualism on the one hand and mechanical materialism on the other. What difficulty the Western world had in attaining equilibrium! On one side there was the tradition of atomism starting with Democritus, Epicurus, and Lucretius, and continued by atheist science all down the ages. On the other there was the tradition, emanating perhaps from Israel rather than from Greece, which laid emphasis on the spiritual reality of the Creator and the angelic host, upheld by priests and prophets. This dualism mirrored itself in a thousand conflicts—necessity versus freedom, matter versus spirit, sensuality versus asceticism, reason versus instinct, the real in contrast with the ideal—local engagements in a seemingly universal campaign. Strung in this field of force were Augustine and Albertus, Bacon and Milton, Darwin and Freud. (These pairs of great men are mentioned not as antitheses but as illustrative examples. All the outstanding thinkers of Europe have been torn between the two poles, and sometimes famous men have incarnated the one and the other in head-on collision—as in the case of Huxley and Wilberforce.) The crowning symbol of this divided mind was the Holy Roman Empire itself, with the Pope and the Emperor as the dual but inwardly irreconcilable apex, two persons on one throne, failing, alas, on earth to attain the perfect

⁷ Certain Neo-Confucian terms and conceptions might still be useful today. As J. Lindsay has pointed out (*loc. cit.*, p. 91), we find it hard to speak of the forms of "organized-ness," the x-factor at all the successive levels, which makes the difference between random collocations and wholes or entities, at each new level "making all things new." "Vitalist theories like Lloyd-Morgan's," he says "or organicist theories like Whitehead's try to fill the gap with spirit, clan, *nisus*, God, or a metaphysical principle of creative purpose. Almost the whole of language is soaked with anthropocentric attitudes. We simply do not possess a word which can simultaneously express the activity of the atom and the activity of the human being. We can express mechanical relations and we can express personal relations; but we lack the integrative vocabulary." Here *li* is exactly what is wanted—the pattern-principle operating in diverse ways at all levels, but a term without any theological or metaphysical undertones, and not at all anthropomorphic. If clues such as this are followed up, Neo-Thomism may run into serious competition.

⁸ In *The Next Development in Man* (London, 1944), especially pp. 59, 61, 85, etc.

union of the three persons in heaven. Many a time have I stood with Chinese friends in our Western cathedrals—at Augsburg or Korcula, Chartres or Lincoln, delighting, like Henry Adams, to explain to them how the essential duality of the European soul found expression in the visible sharing of earthly power between lords spiritual and lords temporal. It is true, of course, that most of the theologians upheld an ultimate primacy of the Church, but century after century the King's lawyers stubbornly contested it.

Nothing of this kind existed in Chinese culture, for the emperor on earth was both priest and king. The Son of Heaven represented below the Pole Star in the heavens above, around which every star revolved. A famous passage in *Julius Caesar* describes this state of things:

But I am constant as the northern star,
Of whose true-fix'd and resting quality
There is no fellow in the firmament.
The skies are painted with un-number'd sparks,
They are all fire and every one doth shine,
But there's but one in all doth hold his place;
So in the world—'tis furnish'd well with men
Yet in the number I do know but one
That unassailable, holds on his rank,
Unshaken of motion, and that I am he

Such words could have been spoken by any Chinese emperor, the unitary head of church and state. It may, of course, be arguable that this "schizophrenia" in Europe all through the centuries gave rise to a certain creative tension which was not present in Chinese society. It may well be that this perennial uneasiness was one of the great spiritual or intellectual factors which led to the rise of modern natural philosophy when the social situation became ripe for it; that remains to be investigated. What is sure, at any rate, is that Chinese culture attained sagely synthesis while adolescent Europe struggled on in the grip of ambivalence and contradiction.⁹ Not until the time of Leibniz did the European spirit begin to be able to transcend the irreconcilable opposites of its youth—God and the angels versus atoms and the void—creation against evolution—cassock and alb at odds with the divine nudity of Aphrodite. This argument does not imply that there were no basic psychological conflicts in Chinese civilization, for some of these are doubtless implicit in the human condition itself; but rather that conflicts within Western man

⁹ What Alan Watts has written on this is deeply true—*The Way of Zen* (London, 1957), p. 175: "Taoism, Confucianism and Zen Buddhism are expressions of a mentality which feels itself completely at home in this universe, and which sees man as an integral part of his environment. Human intelligence is not an imprisoned spirit from afar, but an aspect of the whole intricately balanced organism of the natural world, the principles of which were first explored in the *Book of Changes*. Heaven and earth are alike members of this organism, and Nature as much our father as our mother since the Tao by which it works is originally manifested in the Yang and the Yin—the male and female, positive and negative principles which in dynamic balance maintain the order of the world. The insight which lies at the root of the Far Eastern cultures is that opposites are relational, and so fundamentally harmonious. Conflict is always comparatively superficial, for there can be no ultimate conflict when the pairs of objects are mutually interdependent. Thus our stark divisions of spirit and nature, subject and object, good and evil, artist and medium, are quite foreign to these cultures."

were unduly heightened and intensified by a fundamentally unreconciled dualism, an unsolved contradiction, lying at the root of European culture itself. This is why it has so much yet to learn from China—and from India.

In any case, it is easy to see that the profound unitariness of Chinese culture not only favoured the acceptance of dialectical materialism as its own *philosophia perennis* in fully developed form, but was also very congruent with the conception of a one-party state. Traditional China had never been anything else. Though Taoists occasionally found their way to power, the real ruler through the ages was, as it were, the Confucian Party. This point is extremely important as it mirrors on the sociological side this philosophical, unitary, organic naturalism.

Moreover, Chinese intellectuals were all the more ready to accept dialectical materialism for it was something which in a way they themselves had generated. If one seeks for the origins of dialectical materialism in the West, one can get back to Hegel easily enough, but beyond Hegel there is only Leibniz and when one gets that far, it is not obvious where the further sources were. Of course, you can bring Plotinus into it (much to his surprise), but his philosophy, if organic, was hardly materialist, so it is well worth knowing that Leibniz himself was extremely interested in China. He wrote at least one book on that culture, the *Novissima Sinica*. He edited the Jesuit relations from China and was in extremely close touch with Jesuits living there, such as Joachim Bouvet; they supplied him with the Neo-Confucian commentaries on the classics as well as the classics themselves. Leibniz himself fortunately annotated copies of a number of books relating to Chinese thought, especially by dissentient Jesuits who did not agree with the usual Jesuit view about China, and from these notes we can see that if his own philosophical system was not primarily derived from Neo-Confucian organicism, he found in it much precious support and confirmation.¹⁰

IV. The Absence of Metaphysical Idealism and Theology

There is an obverse, of course, to all this and that is the absence of certain trends in China. Most conspicuous by its absence was any strong tradition of metaphysical idealism. Nothing in China corresponds to Berkeley and Bradley and nothing really corresponds to Plato, for it is only a *jeu d'esprit*, I think, to call Chuang Chou the Plato of China. In his literary manifestation this may pass, but the metaphysical ideas are just not there. I shed no tears about that because I am not a metaphysical idealist. It is true that from the end of the Sung onwards there was a wing of the Neo-Confucians which showed a strong tendency to metaphysical idealism, culminating in Wang Yang-Ming and the philosophers of the Ming period,¹¹ but even there it was, on the whole, I think, more mystical than metaphysical, since in general Chinese culture did not have that Greek inheritance of formal logic which led to metaphysical propositions in the strict sense.

¹⁰ SCC, Vol. 2, pp. 497 ff., 500 ff.

¹¹ Cf. F. G. Henke, *The Philosophy of Wang Yang-Ming* (Chicago, 1916), and, more recently, Fêng Yu-Lan, *A History of Chinese Philosophy*, translated by D. Bodde, Vol. 2 (Princeton: Princeton University Press, 1953), pp. 572 ff.

Here again the Buddhist thinkers must not be forgotten, for many of their schools worked out extreme idealistic positions,¹² but whatever they did affected the general trend of Chinese thought, I submit, remarkably little. Buddhism in China was always really heterodox, powerful imperial support in certain dynasties notwithstanding, and all its conceptions—the total vanity of the world, the imperfection of human society, the salvation of the self by worship and almsgiving, the superiority of the monastic life of moderated asceticism—were decisively rejected by the literati. For them the world was not an illusion, good government and a society of justice and righteousness were feasible, the family with its moderated relations between the sexes was the right and natural way of living, and salvation could look after itself. By the same token there never appeared in China a powerful theological philosophy. The conception of the Creator-God was absent. I once had occasion to go into this in great detail because I was anxious to plumb to the bottom the absence of the conception of Laws of Nature in Chinese thought, and in the end I satisfied myself that it never spontaneously appeared.¹³ Marcel Granet had indeed been right when he spoke about the Chinese conception of the universe as an order which positively excludes the notion of law. Leibniz's idea of a pre-established harmony was one of the most Chinese formulations which ever found itself incorporated in the procession of European philosophical thought.

V. No Persecution for Opinion's Sake

But if "Laws of Nature" did not arise indigenously in the Chinese mind, perhaps some other consequences of the absence of a "jealous" unitary personal God were highly advantageous. Take the question of persecution for opinion's sake. Let any unbiassed enquirer look for himself and report if he can find in Chinese history anything corresponding to the Holy Inquisition. There were, no doubt, political censorships, such as the alarm and uneasiness at the Manchu Court, for instance, about writers who might be secretly supporting the Ming and working for a Ming restoration. In the +18th century, as Goodrich has shown,¹⁴ there was a good deal of draconic investigation of books involving some shocking and unhappy individual cases. But of persecution for theological opinion as we know it in Europe, with the whole background of Crusades against Muslims, Jews, and Albigensians, the Inquisition,

¹² Cf. Fêng Yu-Lan, *loc. cit.*, Vol. 2, pp. 237 ff., 293 ff., 360 ff.

¹³ SCC, Vol. 2, pp. 518 ff.; also, in preliminary form, "Natural Law in China and Europe," *Journal of the History of Ideas*, 12 (1951), 3 and 194; and abridged, "Human Law and the Laws of Nature in China and the West" (Hobhouse Memorial Lecture, London, 1951). Interesting discussions continue still, however. Cf. D. Bodde in *Harvard Journal of Asiatic Studies*, 20 (1957), 709.

¹⁴ L. C. Goodrich, *The Literary Inquisition of Chhien-Lung*, (Baltimore, 1935). The political battles between powerful eunuchs and Confucian reformers could be extremely fierce, as may be seen, for instance, by reading C. O. Hucker's study of the Tung-Lin movement of the late Ming in J. K. Fairbank, ed., *Chinese Thought and Institutions* (Chicago: University of Chicago Press, 1957), p. 132. Moreover, intellectual originality could be dangerous in the more conventional periods, as may be seen by the sad case of a scholar named Li Chih (+1527 to +1602) who was driven to suicide in prison for a Confucian-Buddhist syncretism which a thousand years earlier would have been in the height of fashion. On him one may read O. Franke in *Abhandlungen d. preuss. Adkad. Wiss. (Phil.-Hist. Kl.)*, 1938, No. 10. He was an enlightened freethinker, advocating many things which contemporary China unquestioningly accepts, such as the equality of the sexes and the free choice of partners in marriage, and has honour as a martyr of humanism. But such a case was exceptional.

and the manifold cruelties perpetrated by both sides "for the good of their souls" in the wars of the Reformation and the Counter-Reformation, one simply cannot find any comparisons in China at all. I am not saying that the Buddhists were not interfered with from time to time. They were persecuted to the extent that thousands of monks and nuns were obliged to return to civilian life and even to marry. They were also injured by the enforced nationalization of some of the enormous Buddhist images, the bronze of which was melted down and made into coins. But the only religious persons ever burnt alive in China were some of the Buddhist monks of their own free will, for at time it was believed that suicide was the quickest and most efficacious way to attain Nirvana. The literati abhorred it.

Another phenomenon in European history for which it is difficult to find any counterpart in China, however one gropes amidst the superstitions which flourished in medieval times there as well as in other cultures, is the witchcraft mania.¹⁵ For more than two centuries (the +15th to the +18th) Europe suffered a reign of terror in which unnumbered thousands of persons, notably but by no means exclusively old women, were burnt at the stake or tortured or killed in many other ways after condemnation as witches and sorcerers. This may have been just another aspect of the principle of religious persecution, but it had numerous features which have invited the attention of modern psychopathologists, and it constitutes yet another cultural element which Western civilization face to face with modern Asia has some difficulty in explaining away. It seems to have been a disease associated with the great upheavals of the Renaissance, the Reformation, and the rise of capitalism, for the earlier Middle Ages had been almost as free from it as the 19th century. By contrast, the advantage of having an entire magistracy vowed by long training to a humane scepticism in matters of religion and magic will here be very apparent. Precious philosophically the alogical and irrational element at the heart of Christianity may have been, but it bore inescapably the compensating curse that belief could take the place of reason even on the judge's bench. Moreover, the popularity of literary genres, which is not without relation to their social environment, may show us something. Just as people today delight in detective stories because they live in highly policed and secure societies, tales of ghosts and "occult" phenomena were very popular in medieval China—precisely because few of the scholars believed in them.

Indeed, the idea of religious persecution as understood by both Catholics and Protestants in the West is, I think, truly absent from Chinese history.¹⁶ If it had been present, there could never have been that extraordinary syncretism when in certain periods some scholars went

¹⁵ The best paper known to me on this subject is that of E. T. Withington, "Dr. John Weyer and the Witch Mania," in C. Singer, ed., *Studies in the History and Method of Science* (Oxford, 1917; reprinted, London, 1955).

¹⁶ This was really demonstrated in a classical work by J. J. M. de Groot, "Sectarianism and Religious Persecution in China," *Verhdl. d. Koninklijke Akad. Wet. Amsterdam* (Afd. Letterk.), N.R. 4 (1903), Nos. 1 and 2 (continuous pagination), though his own bias was in the opposite direction. The conception of heresy (*yin ssu, hsieh shuo*) was not indeed totally absent from Chinese thinking, but it was inextricably bound up with the fear of political subversion and popular revolt against the ruling bureaucratic-feudal State. Thus the laws against sects were really directed against secret societies, and a "heretic" who anjured Confucianism or developed some aberrant form of Taoism or

out of their way to dress up in Buddhist robes and a Confucian hat with a Taoist staff, and maintain that the *San Chiao*, the three religions, the three doctrines, were essentially parts of one and the same truth. Few in the West today are prepared to do that kind of thing even with the next chapel down the road.

Here again we come to a very important outcome at the present time, namely the emphasis on persuasion. In the last ten years in China, I do not know how many man hours or man-woman hours or years have been spent attending meetings. The extent to which the Chinese have gone in for meetings has probably never been surpassed in the history of the world since the Early Church. I think it has been done because of this deeply-rooted feeling that you cannot make people really enthusiastic about anything against their will. In fact, so far as I can see, life in the Soviet Union never embodied the profusion of rectification meetings common to every social unit in China; in every laboratory, in every railway junction, in every workshop, these group meetings have been going on. What I have heard from a number of Western friends who have participated in these meetings leaves no doubt that the result has been much greater cooperation and much greater mutual understanding than is probably ever achieved in the working-together groups of our own society.¹⁷

VI. December 25th or July 14th?

Four times in history China was offered the possibility of adopting organized Christianity: once in the +8th century, when the Syrian Nestorians came; once in the +13th century, when there was a Franciscan Archbishop of Cambaluc; once again in the +17th century, in the brilliant age of the Jesuit Mission; and lastly in the +19th century, when the Taiping rebels drew part of their inspiration from a form of Protestantism. But it always failed, and the fact must be faced by Westerners that the Christian religion in its organised forms has been decisively rejected by Chinese culture. As Antonio Banfi has put it,¹⁸ this necessarily followed from the highly organic structure of Chinese humanistic morality, which could not but view with distaste a religion placing so tragic an accent upon transcendence, and therefore inevitably so dogmatic and ecclesiastical. What the Jesuits offered of modern science was enthusiastically received, and though for them the scientific contacts were only a means to an end, they succeeded fully in acclimatizing Galileo and Harvey while utterly failing in their principal aim, the transplantation of Augustine and Aquinas. The Chinese, with their usual acumen, saw through the Jesuit pretensions completely and

Buddhism was indistinguishable from a rebel. Abundance of instances show that this "alarm and despondency" of the officials was perfectly justified; the burden of proof lay on the sect to show that it was non-political. Yet in many ages there could be glad acceptance of foreign religions and some were acclimatized successfully for centuries—Zoroastrianism, Nestorian Christianity, Manichaeism, Islam, and Israel, apart from the outstanding example of Buddhism itself. To sum up the matter, the point at issue tended always to be political rather than philosophical, and the *odium theologicum* of the West was by that token absent.

¹⁷ Anyone who would like to go further into this might read what W. J. H. Spratt, Professor of Psychology at Nottingham, has written in his book *Human Groups* (London, 1958). He spent considerable time in China a few years ago, studying this from the aspect of group therapy.

¹⁸ *Comprendre*, 19 (1958), 21.

realized that the modern science of the Renaissance was not something essentially Western, but something essentially new.¹⁹ They also realized that it had nothing intrinsically to do with Christianity.²⁰ The religion and theology of Europe could not be regarded as "superior" doctrines; they had developed, no doubt, in the same civilization as modern science, but this was a relation of accidental historical contiguity and not one of necessary cause and effect. Moreover, as time went on, the behaviour of the Western powers, with all its elements of imperialistic bullying and racial pride, made the preaching of missionaries seem more and more systematically hypocritical. The last straw in this process has been added in our own time by the self-caricature of its mores and modes of life which the West has offered to Asia, that mixture of sex and sadism characteristic of its cheap films and books.

Such was the negative effect of Europe on China. But if the West could not make clear and sincere the message of the 25th of December, that of the 14th of July was a very different matter. Christianity has been well called "the grandmother of Bolshevism," but that ancestry had been part of a particular historical process, and philosophically other grandparents or "foster-grandparents," e.g., Confucianism or Taoism, could qualify in other parts of the world. The revolutionary socialism of the great European bourgeois revolutions, from the Levellers at Burford Bridge to the Sans-Culottes storming the Bastille, went over into Chinese culture without the slightest obstacle because it had to do more clearly with the fundamental needs of men incarnate in their material being. This was the great positive effect. On such common ground China and all Asia could accept European influence unhesitatingly, for Europe, too, was giving something up—its own heritage of medieval feudal and capitalist oppression, as well as all the beliefs connected therewith.²¹ Besides, in the course of time, a more enlightened West would be ready to accept Chinese influence once again, as it had done with such effect in the 18th century.²²

¹⁹ This point is elaborated in detail in SCC, Vol. 3, pp. 448 ff. See also J. Needham, *Chinese Astronomy and the Jesuit Mission; an Encounter of Cultures* (London: China Society, 1958).

²⁰ The implicit logic of the Jesuit approach was that modern science was better than medieval science, and that only Christendom could have produced it; the Chinese should therefore become part of Christendom. The *non sequitur* was that a unique historical circumstance (the rise of modern science in a civilization with a particular religion) cannot prove a necessary concomitance. Religion was not the only factor in which Europe differed from Asia. In the actual historical and ideological genesis of science and modern science, Israel and Christianity, and for that matter Hellenism, too, were no doubt very much concerned, but historical genesis is not the same thing as intrinsic inseparability. Once the historical process had come about, other world-views could be just as compatible with science as Christianity ever was, if not more so, as in the case of Taoism.

²¹ This has been seen by J. R. Levenson in a brief but most acute paper, "Western Religion and the Decay of Traditional China; the Intrusion of History on Judgments of Value," *Sinologica*, 4 (1954), 14. He reprinted it in his book, *Confucian China and its Modern Fate; the Problem of Intellectual Continuity* (London, 1958), pp. 117 ff. This work is full of ingenious studies and valuable insights, yet it fails altogether in its main objective, namely, to show that contemporary China has lost its roots in the past. Indeed, in its anxiety to magnify Western influence on Chinese thinking at all costs, Levenson's work runs grave risk of being described as the last refuge of the doctrine of Western intellectual superiority.

²² Europe's discovery of a morality without supernaturalism, a chronology without a flood, and a cosmology without any crystalline spheres is an oft told story which need not be repeated here. But I shall never forget the impassioned telling of it long ago at a lecture in Cambridge, to which Dr. E. R. Hughes came armed with the heavy artillery of *Confucius Sinarum Philosophus* in folio.

All the pioneers of modern China were marching in this demonstration. One of the greatest of Sir Thomas Moore's successors was Khang Yu-Wei, who in his *Ta Thung Shu* (Book of the Great Togetherness) sketched a "utopia" extraordinarily farseeing in its structure and imbued with many traits characteristic of the Chinese tradition as well as of the modern scientific world-view.²³ The greater Sun Yat-Sen, that improbable medical revolutionary to whom I have already referred, did his best in his Three Principles to put socialism into Chinese terms.²⁴ It is surely needless to recall that at that time the influence of the Russian Revolution on Chinese thinking was extremely powerful. And, indeed, until 1927 the Kuomintang was a real positive force, even if only semi-conscious; it did a great deal to modernize the country, to stamp out abuses, and to continue the tradition of public works and public ownership of industrial enterprises. Only after the crisis of that year was it fully captured by the land-owner-banker-compradore group, who found it much more profitable to engage in financial speculation abroad than to develop their own country. But this only postponed the inevitable conclusion, for what the Chinese people fundamentally appreciated of Europe was the ideal of liberty, equality, and fraternity, not the theology of a Church too often, alas, subservient to the powers that be.²⁵ Moreover, the merit of marxism (or, as it was called by its founding fathers, "scientific socialism") was, in Chinese eyes, that although it had originated in a particular historical situation in Western Europe, its doctrine, like that of physical science itself, was intrinsically universal, not tied to any particular civilization, and capable of illuminating and analyzing the social history of the Chinese themselves. And so both Chinese and Westerners could go forward on an equal and mutually appreciative basis, both working to end the oppression of the past in all its forms, "neither afore nor after other," without any difference or inequality."²⁶

²³ This work was conceived and first drafted in 1884 and 1885, first printed (in part) in 1913, and first completely published in 1935 (reprinted in Peking in 1956). An excellent but abridged translation by L. G. Thompson, *The One-World Philosophy of Khang Yu-Wei* (London, 1958), is now available.

²⁴ Besides the paper by Scalapina and Schiffrin mentioned in the preceding article, see H. Schiffrin on Sun Yat-Sen's land policy in *Journal of Asian Studies*, 16 (1957), 549. On that great man there are many books, but reference to L. Sharman, *Sun Yat-Sen, his Life and its Meaning; a Critical Biography* (New York, 1934), will have to be enough here. A *Source-Book of Sun Yat-Sen's Political and Social Ideals* was collected and translated by Hsü Shih-Lien (Los Angeles, 1933).

²⁵ One might find parallels within the European orbit itself. In his recent book, *The Greek East and the Latin West; a Study in the Christian Tradition* (Oxford, 1959), Philip Sherrard, writing of the time of Korais in the early 19th century, says: "Thus the union with Western Europe which the Greek East had so energetically rejected at the close of the Byzantine period was at last to be accomplished, not any longer in Christian terms, but in those of the secular temporal ideals of the modern West."

²⁶ On the vitally important mental attitudes here involved, the controversy between Umberto Campagnolo and Alioune Diop which has recently been going on in *Comprendre*, 19 (1958), 7 ff., 9 ff., 157 ff., is well worth reading. Campagnolo voices a widely held view when he states as a dilemma that either the great historical civilizations are immiscible and irreducible individuals, in which case they can never meet, or they are destined to transcend themselves in a world culture, in which case no one can know what this will be. Campagnolo escapes from this by maintaining that one of the great civilizations possesses in its original intuition and principles the means which permit it to understand and to estimate the others, and to lead them to estimate themselves according to its own scale of values. This is the "civilization of the universal" which has developed only in Europe (and by extension, in America) and upon which devolves the historic mission of accomplishing the ethnic unification of the world. To this Diop replies that such a doctrine is nothing but racialism in its most rarefied, insidious, and Sunday-go-to-

VII. China and the History of Law

All this was bound to have a great effect on the Chinese conceptions of law. One can well understand why there was no feeling of outrage when the previous Kuomintang code, after all a very artificial importation from the West, was swept away and replaced by more popular laws. In fact, throughout Chinese history there was a great dislike of codification and a strong aversion to abstract legal principle.²⁷ The devotion of Roman law, for instance, to highly abstract formulations cannot be paralleled at any time in China. There was a profound belief that every case ought to be judged in the light of the concrete circumstance, i.e., on its own merits. I am not, of course, saying that there was never any codification of law. On the contrary, there were jurists in every century from the Han onwards and many of them compiled great collections of law cases; moreover, there were official codes, of course, in each dynasty. Yet on the whole they never played anything like the part (many people would say the "sublime part") of the Justinian code and the other great legal institutions of Europe. Furthermore, the idea of equity, if that is the right way to phrase it, was much more important in China than the idea of positive law. Expressions like *summa lex, summa injuria*, would have been inconceivable in traditional Chinese society. Arthur Waley once excellently remarked that in China in the Middle Ages no magistrate, having made what he knew to be an unjust judgment, would have descended from his bench congratulating himself on having faithfully applied the law of the land.²⁸ This was not a characteristic of Chinese jurisprudence, nor was there any delight in legal fictions. Similarly, Chinese medieval society was not characterized by great addiction to litigation. People chiefly kept out of the way of the noospheric civil magistrate as much as they could, and did not enjoy taking cases to be judged in civil actions such as the West delighted in. Advocates and pleaders were therefore scarce, and the magistrates' consciences were counsel for the defense. Such differences in the conception of law in China and the West do seem to help in explaining the changes of the present day.

VIII. China and the History of Science

Finally we come to the last question which I wish to raise, namely, the position of Chinese culture in the history of science and technology. Only the study of the social, intellectual, and economic system will explain the remarkable development of science, pure and applied, in China in ancient and medieval times; and the failure, or, if you like, the absence, of the development of *modern* science there since the time of Galileo at the beginning of the +17th century. One may say, broadly

meeting form. The civilization of the universal cannot for a moment, he says, be confused with the civilization of the West, but must necessarily arise from the contributions of all peoples; and the fact that we cannot yet know its features is not an argument for denying that it will come. Needless to say, I am fully in sympathy with Diop. The conception of the "chosen people," God's elect, which Europeans and Americans have transferred to themselves from ancient Israel by way of the link between puritanism and capitalism in the early phases of Western technological development, is still working great evil in the world.

²⁷ This is explained more fully in *SCC*, Vol. 2, pp. 521 ff.

²⁸ A. Waley, *The Life and Times of Pai Chü-I* (London, 1949), p. 141.

²⁹ *Comprendre*, 12 (1954), 132; cf. *SCC*, Vol. 3, pp. 448 ff. For a well-stated Chinese view of this see Wu Shao-Fêng, "L'Europe Créatrice," *Comprendre*, 19 (1958), 213.

speaking, that Chinese science and technology were very much more advanced than those of Europe (apart from the Hellenistic wave of brilliant theoretical formulation) between the -3rd and the +15th centuries, but after that, Renaissance Europe began to take the lead. Indeed, in Galileo's time the technique of scientific discovery may be said to have been itself discovered, with the result that the unified world of modern science came into being, common to all men and liberated from the ethnic stamp which had qualified all forms of medieval science and technology. As I have said elsewhere,²⁹ one must understand clearly that Renaissance Europe did not give rise to "European science," but to universally valid *modern* science, in which men and women of all cultures can freely participate. The fact that this break-through took place in Europe and in Europe only is not proof of any specially privileged quality of the "Faustian soul," as the Germanic mystagogues used to maintain, nor is it an argument for conferring upon European civilization a superior rank as the "culture of the universal" as certain writers today still like to maintain. For until it has been demonstrated that the concrete historical development of Europe, the form of its feudalism, the needs of its growing mercantilism and industrialization, the prior impulsions and facilitations of its intellectual history from the pre-Socratic Greeks onwards, and other similar factors, will not explain in an adequate manner the "miracle of Galileo," we have no right to appeal to mysterious predestinations or gifts of the European spirit as the explanation of the origin and growth of modern science. And, in view of the great achievement of non-European peoples on which this modern science was built, we have every reason for not doing this. As for China, the problem remains: why did the Chinese society of the +8th century favour science as compared with Western society, and that of the +18th century inhibit it?

What happened at the Renaissance in Europe, the immense rise of modern science after the time of Galileo and the perfection of the method of the mathematization of hypotheses, had profound effects upon the relations of the peoples of East and West. We know only too well the results of it. We know how the Western standard of life was powerfully raised by modern technology, and also how bad it was for Westerners to be granted those two or three hundred years of military dominance in which they could so easily overawe all other cultures.³⁰ But if the world can avoid self-destruction by the unimaginable powers which modern physics has unleashed, it can benefit almost unimaginably by them. Behind this question of why the rise of *modern* science took place only in Europe, and did not occur in East Asian civilization in spite of so many great Chinese achievements in the past in the scientific, mathematical, and technological fields, lie all the problems of the nature and development of Chinese society.

We have already had occasion to make certain suggestions as to why nothing corresponding to the Renaissance took place there. The whole city-state motif was absent in China from the start. The merchant interest, of such cardinal importance for the rise of modern science in the

³⁰ Moreover, as J. Romein has well said in *Comprendre*, 19 (1958), 91: "from their temporary technical superiority Westerners wrongly inferred a perennial Chinese technical inferiority."

West, was systematically suppressed in China. Then there were the ideological factors, on the one hand the assembly of deified ancestors, and on the other hand the personal creator-god, whose rational decrees men thought they could spell out haltingly in their own mathematical language;³¹ or again on the one hand the indwelling Tao of things which made them spontaneously cooperate, on the other the assumption of atomistic impacts and mechanical propulsions.³² Natural science in its modern form seems to have needed a certain heuristic naiveté which Chinese natural wisdom lacked.

Such was the first question which prompted me to devote the rest of my life to preparing a comprehensive treatise on the history of science, scientific thought, and technology in China. Afterwards I came to realize that behind this there was another question at least equally important: why, before the Renaissance, in the period from about -200 down to about +1400 or +1450, was China often so far ahead of Europe? This also has to be answered; why was bureaucratic feudalism so much more efficient than Hellenistic imperialism or medieval Western feudalism in applying science to human affairs—very often, in a way, applying a theoretical science that did not exist? This paradox is rather nice, but one can give many examples to illustrate it, not all by any means in the technological field. Let us leave on one side the famous inventions of printing, gunpowder, and the magnetic compass, so justly celebrated by Francis Bacon. I have already referred to the mastery of the technique of cast iron, the obtaining and handling of iron in the fused state. In Europe no one knew any cast iron until about +1380. In China, however, they had been habitually making agricultural tools of it as far back as the -2nd century. I cannot, of course, stop here to explain how it was done. I think we know.³³ It is only one outstanding example of how far China was ahead of the West technically in those early centuries. Equally striking is the fact that in the absence of deductive geometry as developed by Euclid and Apollonius in the West, it was in China and not in Europe that long before the Renaissance the inventions of the equatorial mounting for the telescope³⁴ and of the mechanical clock³⁵ were made. This latter is particularly extraordinary, since China has so often been pictured as a “timeless” agrarian civilization.

One point which may be very significant is that some of these medieval inventions were closely connected with the bureaucratic character of the culture. As instances one might mention the seismograph³⁶ and

³¹ See the references given in note 13.

³² SCC, Vol. 2, pp. 279 ff. It is highly significant that while theories of atomism never “caught on” in China though continually introduced in association with Indian Buddhist thought, the Chinese developed primitive but quite clear forms of wave-theory, especially in relation to the influence of Yang and Yin forces. This will be discussed in detail in SCC, Vol. 4, Part 1, but in the meantime, see J. Needham and K. Robinson, “Les Ondes et les Particules dans la Pensée Scientifique Chinoise,” *Sciences* (Paris, 1960). Similarly, the idea of “action at a distance” aroused no difficulties in Chinese scientific thinking and was accepted by everyone.

³³ See the references given in note 11 of the previous article.

³⁴ SCC, Vol. 3, pp. 367 ff., and J. Needham, “The Peking Observatory in +1280 and the Development of the Equatorial Mounting,” in A. Beer, ed., *Vistas in Astronomy*, Stratton Presentation Volume, Vol. 1 (London, 1955), p. 67.

³⁵ SCC, Vol. 4 (in the press), but also J. Needham, L. Wang, and D. J. de S. Price in *Nature*, 177 (1956), 600; and *Heavenly Clockwork; the Great Astronomical Clocks of Mediaeval China* (Cambridge, 1960). Meanwhile, see my “The Missing Link in Horological History; a Chinese Contribution,” *Proc. Roy. Soc. A.*, 250 (1959), 147 (Wilkins Lecture at the Royal Society).

the rain-gauges and snow-gauges.³⁷ In a closely knit bureaucratic structure, an élite society where there was a high degree of organization and foresight, even though feudal, it was desirable indeed to be able to know if and where an earthquake had occurred, in order to be sure to send relief and also perhaps troops to the area which had been severely affected. This was clearly the case in the +2nd century when the ancestor of all seismographs was put into operation by Chang Hêng. Equally, the rain-gauges and the snow-gauges are interesting from this point of view because it was necessary to be forewarned if there were going to be serious floods, and we know from +11th- and +12th-century mathematical books, which give problems about the shape of rain-gauges, that they were quite widely used, probably established among the western foothills bordering on the Tibetan plateau, to tell how the rainfall and the snowfall were shaping. Another example about which my collaborators and I have recently written at length³⁸ concerns a very remarkable geodetic survey, the meridian arc established by Chinese expeditions sent forth in the year +723, which made measurements for two or three years and then combined the results. This was under the supervision of the Astronomer-Royal, Nankung Yüeh, and an outstanding Buddhist monk and mathematician, I-Hsing. This arc was undoubtedly the most remarkable piece of organized field work in the whole of the Middle Ages, for it ran from the borders of Mongolia right down to Indo-China, a distance of some 2,500 kilometres, with about nine stations along it at which systematic observations were made of the summer and winter solstice shadows and polar altitudes. I doubt whether in any other medieval culture it would have been possible to imagine or to carry out such a highly organized scientific survey. It therefore clearly deserves remembrance, and it was certainly associated with the bureaucratic character of that feudal society.

China today is recovering these past achievements and much work on the history of science is going on. There is a great enthusiasm there for science as the indispensable means of raising the Asian standard of life to equality with the rest of the world. But Chinese people are also beginning to be very conscious of the great discoveries, observations, and inventions made by their ancestors. They are getting to know about facts which the dust storms of history have hidden for centuries, and which historians of the modern West have not always been happy to uncover.³⁹ Is it not important for the disinherited thinkers and technicians of Asia to realize that though the first complete Western descriptions of parhelic phenomena (mock suns, haloes, and arcs, caused by ice crystals in the

³⁶ SCC, Vol. 3, pp. 626 ff.

³⁷ SCC, Vol. 3, pp. 471 ff.

³⁸ SCC, Vol. 3, p. 292 ff., but much more fully in the paper by A. Beer, Ho Ping-Yü, Lu Gwei-Djen, J. Needham, E. G. Pulleyblank, and G. I. Thompson, “An +8th century Meridian Line; I-Hsing’s Chain of Gnomons and the Pre-History of the Metric System,” *Vistas in Astronomy* (1960).

³⁹ Thus the Jesuits knew about the sand-driven wheel-clocks used in the Ming but said remarkably little about them in their despatches home, and that not very complimentary; see *Heavenly Clockwork*, loc. cit., pp. 155 ff. I well remember that when an exhibition of the history of printing in England to celebrate a Gutenberg centenary was being prepared, a suggestion that some specimens of earlier Chinese moveable-type printing might be included met with a somewhat chilly reception. And typical of the approach of some Western scholars was the remark of an eminent historian of magnetism concerning the +11th century description of the needle-compass by Shen Kua: “there is no immediately apparent ground on which this can be discredited.” The reference will be found in SCC, Vol. 4, Part. 1.

upper atmosphere) were given in the +17th century, every single component of the complex displays had been observed and named by Chinese astronomers a full thousand years before?⁴⁰ Should they not take legitimate pride in the fact that the combination of eccentric, connecting rod, and piston rod, used in every steam engine since Watt and in every internal combustion engine, first occurs not in the designs of the engineers of the Italian Renaissance, not in Leonardo, not in the Germans or Bohemians who preceded him, certainly not in the Alexandrians, but in the metallurgical water-power blowing engines described by Wang Chên about +1300?⁴¹ You may now even find little books of pictures for school children explaining to them about Chang Hêng and his seismograph, or about Tshai Lun's +1st-century invention of paper, or Pi Shêng's +11th-century creation of movable type; how the "Cardan" suspension goes back to Ting Huan about +180,⁴² and the "Pascal" triangle to Chu Shih-Chieh in +1303,⁴³ All these achievements are well-established by sinological research. Thus Westerners should realize that science is not regarded in China as something for which the Chinese should feel themselves beholden to the generosity and kindness of Christian missionaries, something with no roots in their own culture. On the contrary, it has very great and illustrious roots, and the Chinese are becoming more and more conscious of them. If the society of the Chinese Middle Ages had been so lacking in freedom, so despotic, as some would have us believe, the innumerable inventions and discoveries of those ages would be perfectly inexplicable; nor could one see how the lead over Europe could have been maintained for so long. Stability perhaps, but where was the "societal stagnation" which some of our pundits find exemplified in medieval Chinese culture?

Epilogue

It has been my aim in the foregoing pages to provide a background for thought on contemporary China, seen through the eyes of one student of the history and culture of that great civilization. I have no wish to minimize in any way the extraordinary improvements in the lot of the "old hundred names" which have been effected by the present Chinese government and under the leadership of the Communist Party. At the same time, its work can hardly be understood by Westerners unless they bear in mind certain age-old features of Chinese culture of which too often they are lamentably ignorant. Indeed, contemporary Chinese writers themselves, with the laudable aim of demonstrating the profound renewal and re-birth of their country, sometimes tend to denigrate their own past, whether by emphasizing dark aspects such as the subjection of women or the rapacity of landlords, or by under-valuing the philosophy or art of former ages. This is only to cut off the branch on which they are sitting. The fact is that the rest of the world needs to learn, with all humility, not only from contemporary China but from the China of all time, for in Chinese wisdom and experience there are medicines for many diseases of the spirit and indispensable elements of the future philosophy of humanity.

⁴⁰ SCC, Vol. 3, pp. 474 ff., and with much more detail in Ho Ping-Yü and J. Needham, "Ancient Chinese observations of Solar Haloes and Parhelia," *Weather*, 14 (1959), 124

⁴¹ The evidence is assembled in SCC, Vol. 4, Part 1.

⁴² See SCC, Vol. 4, Part 1.

⁴³ See SCC, Vol. 3, pp. 133 ff.

