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The Phoenix Country

Mining in Old Japan

Peasant Art

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COVER PICTURE

Spring in the Home of Peonies—a painting by Chen Peng-tung.

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EASTERN DIARY

A sense of great national unity prevailed when the Chinese people celebrated the quarter-centenary of the People's Republic. At the grand reception given by Premier Chou En-lai on the eve of the National Day, more than 4,000 people attended, including a number of foreign dignitaries and leaders of Communist Parties. The Premier's presence and the toast he proposed received enthusiastic and prolonged applause. Obviously aiming at the speculation which had persisted around the Chinese leader, a French journalist in Peking commented pointedly that evidently the Premier was the target, not of criticism, but of admiration.

What caught the attention of most observers was the unusually long list published in the *People's Daily* of names of those who were present at the reception, some 2,215 in all, to be precise. And many of these observers have tried to read a great deal into the fact that in the list were also quite a number of names which had not appeared on China's political scene for some time. To these observers I think one should point out that, in both the Party Constitution approved by the Ninth Party Congress and that approved by the Tenth Party Congress, it is explicitly stipulated that a Communist should be able to unite with the great majority of people, including those who have wrongly opposed him but have since acknowledged their mistakes.

In fact as early as March 1949 Chairman Mao had called upon Party members at the close of the Second Plenary Session of the Seventh Central Committee of the Communist Party of China:

Pay attention to uniting and working with comrades who differ with you. This should be borne in mind both in the localities and in the army. It also applies to relations with people outside the Party. We have come together from every corner of the country and should be good at uniting in our work not only with comrades who hold the same views as we but also with those who held different views. There are some among us who have made very serious mistakes; we should not be prejudiced against them but should be ready to work with them.

To me what was especially exciting was the long section, taking up almost a third of the list of names, devoted to representatives from the grass-roots. These included PLA combat heroes, model workers and peasants and advanced workers in various fields; representatives of outstanding units in criticizing Lin Piao and Confucius, educated young people who had settled in the countryside, worker-peasant-soldier students, Red Guards, as well as representatives of 'May 7' cadre schools and urban neighbourhoods.

As it had been on similar occasions in the past, many former Kuomintang generals, who came over or were captured towards the end of the War of Liberation, also made their appearance at the reception. Most of them are now with the People's Political Consultative Conference, writing memoirs or working for the eventual liberation of Taiwan. At the main table one found Shang Chen, the Kuomintang commander of the 6th War Zone during the War of Resistance Against

Japan and head of its mission to Japan after the war. He has been living in Japan since and is now on a visit to Peking for the first time after Liberation. It must have been a sentimental journey for the former Kuomintang general, for some 40 years back he was once also the Mayor of Peiping, as Peking was then known.

And yet unity was still one of the most important concerns, if not the most important, of the Chinese people when they celebrated their National Day. The quotations from Chairman Mao that appeared on the front page of the *People's Daily* concluded with 'Unite to win great victories!' The editorial published on the same day in the three leading journals in Peking warned:

> **The unification of our country, the unity of our people and the unity of our various nationalities—these are the basic guarantee of the sure triumph of our cause.** *Class enemies at home and abroad always try to undermine such unification and unity by every possible means, and we must sharpen our vigilance.*

Whenever Chinese call for unity, some observers in the West conclude that there is a lack of unity, a crisis, in China. This is understandable, for to many Western observers unity is a state of affairs. Either there is unity or there is no unity. So that when you call for unity, it means, to these Westerners at least, that there is disunity.

But in China unity is not viewed as a state of affairs, but a process as it really is. As society, particularly a dynamic society such as China's, moves forward, it is bound to come face to face with new problems at every major step it takes. When new problems arise, there are bound to be differences among the people as to how such problems should be met. Discussions, or even debates, then take place, and it is only after these that agreement can be reached among the great majority of the people as to the most effective and correct ways to solve these problems. But then new problems will again appear. Thus unity is something which is always in the process of formation as society moves forward, and it has to be fostered continually through discussion and persuasion. To do so one has to recognize that there are differences among the people and understand the Marxist law of the unity of opposites. That is why the editorial quoted above stressed:

> *It is imperative to strengthen the Party's centralized leadership and the great revolutionary unity of the whole Party, the whole army and the people of the whole country under the guidance of Chairman Mao's proletarian revolutionary line.*

And then it went on:

> *We must learn to handle all problems from the dialectical approach of one dividing into two and earnestly carry out the proletarian policies laid down by Chairman Mao, strictly distinguish between the two different types of contradictions (i.e. the contradictions among the people and those between the people and the enemy—LTY) and handle them correctly, unite over 95 per cent of the cadres and masses,* **bring all positive factors into play, unite with everyone that can be united with, and do everything possible to turn negative factors into positive ones so as to serve the great cause of building a socialist society.**

In the period of building socialism, when there are still classes and class struggle, there will be enemies who are for ever ready to pounce on any differences among the people to sow dissension and disunity, and it was against this that the editorial was putting people on their guard.

The Chinese people have never been so united. But unity is not achieved once and for all. It will continuously develop and has to be conscientiously fostered.

One of the aspects of unity in China is that of the 55 nationalities which make up the Chinese nation. In her thou-

sands of years of history, China has forged herself into a multi-national country. While the Hans account for 94 per cent of the population, the smallest nationality, the Hoches, number only a few hundred.

The formation of such a union is for the benefit of all the nationalities, big or small. It has brought them closer to each other, facilitated their cultural and economic exchanges, thus helping them develop their economy. The unity of the nationalities has also greatly strengthened their resistance against foreign aggression, especially the imperialist aggressions during the past century.

It is true, though, that the different nationalities, living in the same realm that is China, had not been free of contradictions when the multi-national empire was being forged. There were wars and national oppression, with this or that nationality gaining the upper hand over the others at different times. Rulers of the different nationalities occupied each other's territories and robbed each other's people.

But in the final analysis, national contradictions are none other than an expression of class contradictions. Rulers of this or that nationality made wars on other nationalities either for their own aggrandizement or to enable them to better hold their own people in subjection. Throughout Chinese history we have seen expansion by the Han rulers, but also invasion by other rulers into the regions which were mainly populated by the Hans. As a matter of fact, for almost half of the past ten centuries China was ruled by non-Han emperors. But all this did not change the course of history. The process of the formation of the union went on until China became an indivisible entity even long before the founding of the People's Republic.

It was, however, the founding of the People's Republic that brought the unity of the nationalities to a completely new stage. With the abolition of class oppression, there also went national oppression. For the first time in history the different nationalities live in complete equality and peace, which is no longer tarnished by suspicions, hostilities or wars. It has become all the easier for them to help each other develop their own communities politically, socially and economically. Take Tibet as an example. The people who lived there only a quarter of a century ago in a vast backward, theocratic serfdom now live in communes led by former serfs, their own equals, and are free to build their own future. In this land where 25 years ago not even a match stick was made, modern industry is developing by leaps and bounds.

To institutionalize this new found equality, national autonomies have been set up in areas where minorities live in compact communities so that they can enjoy the right to manage their own affairs. Altogether there are now five autonomous regions equivalent to provinces, 29 autonomous *chous* or leagues equivalent to administrative regions, each covering a number of counties, and 69 autonomous counties or banners. The five autonomous regions are Tibet (Tibetans), Inner Mongolia (Mongolians), Sinkiang (Uighurs and others), Ninghsia (Huis) and Kwangsi (Chuangs). The autonomous organs at all levels exercise rights of self-government under the centralized, unified leadership of the Central People's Government. This means they are entitled to manage local finances within the scope prescribed by the Constitution of the People's Republic and enact rules and regulations on local elections and taxation according to the political, economic and cultural characteristics of their own nationalities.

The minority populations scattered over other parts of China enjoy the same democratic rights as the local inhabitants and receive special consideration for their way of life and customs and habits. Just to mention an example, special restaurants are set aside for people of the Mus-

lim faith in many cities in China where there are Hui communities and special meals are also served on trains and aeroplanes for them.

Increasing numbers of cadres have been trained from among the working people of the minorities to take over the administration of their own areas. Many of them have also been recruited by the Communist Party. There are now minority nationals not only on the Party Central Committee, but also in its Political Bureau. In the Sinkiang Uighur autonomous region, there are now more than 84,000 cadres from the Uighur and other nationalities, an increase or more than 20 times over the early post-Liberation days, and women account for 19 per cent of the total. In the Inner Mongolian autonomous regions, cadres of local nationalities numbered some 20,000 last year, and many held leading posts on Party committees and revolutionary committees in leagues, municipalities and banners. In the Tibet autonomous region, Tibetan and other minority cadres, mostly former serfs or slaves or their children, make up more than half of the total number of cadres.

The minorities are encouraged to use and develop their own language. Written forms for minority languages were worked out where there had been none. Some minorities who once kept records by tying knots have now created their own written languages with state aid. Books, newspapers and periodicals are published in the Mongolian, Tibetan and other minority languages in great quantities. Institutes for nationalities and universities and colleges have been set up in leading minority areas. Each national minority, however small, has its own college graduates.

While family planning is promoted in almost all the Han areas, it is not encouraged in the minority areas, which are usually much less densely populated. Thus the minorities, some of which were at the point of dying out at the time of Liberation, have seen a rapid growth in their population. With the improved medical service and the wiping out of various infectious diseases, the Mongolians have grown three-fold in numbers in the past quarter of a century. In Sinkiang, the population of national minorities has increased by upwards of 50 per cent since 1949. The Sibos, one of the smallest nationalities in the region, has more than doubled its population.

Dances and music of many national minorities have become very popular throughout the whole country. Nowhere in China is a concert complete without them.

A recent Hsinhua News Agency report reveals that, in China's countryside where live 80 per cent of her population, a medical network has come into being which knits together the county hospitals, commune clinics and health centres of the production brigades. Serving this network is an army of some four million medical workers, including about a million barefoot doctors.

The county hospitals are run by the Government while the clinics of the communes are generally financed by the communes and subsidized by the Government. Health centres of the production brigades are sponsored collectively by the commune members themselves.

One of the most heartening creations, second probably only to the barefoot doctors in the field of medical care, has been the cooperative medical service, which was first conceived here and there in a number of communes but has since spread far and wide. The trend seems to indicate that soon there will be a cooperative medical service in every commune or brigade.

Under the system of cooperative medical service, each peasant (child included) contributes every year about one *yuan* to the cooperative fund and for this he or she is entitled to free or partly free medical care. Ordinary diseases are to be treated at the health centre of the pro-

duction brigade while more serious cases are referred to the commune clinics or the county hospitals. During hospitalization, in some cases one needs only to pay part of the expenses involved while in some other cases only board is to be paid for.

Breaking away from centuries-old traditions, the barefoot doctors no longer sit as doctors did before in their clinics waiting for the patients to come to them or send for them. They go out of their clinics to look for patients and often climb mountains and ford streams to attend the sick and bring medicine to the patients at their doorstep.

Besides treating disease, barefoot doctors also join the local health workers in popularizing knowledge of hygiene, maternity and child care, offering advice on family planning, giving preventive inoculations and mobilizing the masses to participate in patriotic health campaigns.

Putting in practice prevention first, China has long since wiped out smallpox, the plague, and cholera. China is probably the only country in the world where it is impossible to find a case of venereal disease even for teaching purposes. The incidence and mortality rate of other infectious diseases, parasitoses, endemic and occupational diseases have plummetted while some of these diseases have been in the main brought under control.

Lee Tsung-ying

Dialogue on the Peasant Art of Huhsien

S. Marie Carson

A prime purpose of our trip to the People's Republic of China was to begin a dialogue with artists there concerning their contemporary art, its function, and their means of implementing their stated project of continuously raising its standards. We sought mutual enlightenment and exchange. Our intentions were warmly welcomed; we received the utmost cooperation everywhere we went.

We had done a lot of homework to familiarize ourselves with their social point of view; long before going we had been struck by the immense import of their concept of 'for whom' art is necessarily created and by the fact that this would dominate our dialogue as well as the dynamics of their creativity. For that their art is to be created—as is everything—for the people would factor every aspect of the interaction of form, content, and individual imagination, with the special effect of eliminating individualism as an ideal; it seemed to us that, if we did not give this careful consideration, it would have to conflict with our feelings about the artist's necessity for freedom of expression and to be disruptive to the wished-for dialogue. In the process of this consideration we became increasingly aware of our bias toward a certain kind of individual freedom as cultural, but we were also ever more aware of the alienation of the art that extremes of that freedom can and do produce, and had come to recognize that freedom conceived as an expression of subjective individualism had not even sustained what was at least an important revolution in style. We saw that neither does the West any longer have a revolutionary art in any sense of the word nor are our artists truly free. Aside from the fact that any freedom is relative to certain social constraints, the artists are allowed their freedom only when they have nothing revolutionary to say. Even when today's socially motivated emphasis on individualism in style, especially as coupled with a social isolation derived from the ethic of social-political individualism, leaves most artists to argue in a void attended to only by their own élite, while, to complete this socially inflicted self-cooption of freedom, whatever new style becomes, the style is then and there coopted by the commercial sectors of our system. To have come to see that revolution in the sphere of art alone without social revolution has become revolution in a vacuum, and that individual freedom of expression operating aside from full social commitment can be so led astray left us very open for the seeking of a new insight into creativity and a new definition of freedom of expression. For this we knew our trip to China was

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S. Marie Carson and her artist husband Douglas Gorsline visited China early last year and had discussions with professional and amateur artists there.

an immense opportunity; to be able to discuss possible ways of the development of creativity in a revolutionary society where social commitment was 'the all' could provide a way of re-focusing of aesthetic standards of expression for us while perhaps, hopefully, giving them some insights which would be of assistance in their efforts. The desired opportunity was amplified beyond our expectations by their overwhelmingly generous implementation of it.

Despite all our preparatory efforts we knew the subject of aesthetics was going to be difficult of approach because of the as yet unbridged gap between our very different socio-cultural formations. So we were extremely fortunate that all we had hoped to discuss was given an excellent framework of points of reference by the exhibition of peasant art which had just opened in Peking as part of the National Exhibition, excellent particularly because of its impact on everyone.

It became clear that the formation of the showing in this way had many implications. The fact that peasant art was chosen for and featured in this National Exhibition, to begin with, indicated recognition of the active participation of, and the need to promote such participation of, the peasants in the national culture—not a new recognition in China but of interest to us. But also it was, we think, a recognition that the art the peasants had produced had something to say culturally as well as socially.

The peasant art was specially selected. While the works of professionals and amateurs (peasant, worker, soldier spare-time painters—self-taught or trained in commune, provincial or district schools —many of whom do propaganda work in the local commune or factory) are recommended from shows selected at city and provincial levels with representatives of city and province deciding what to send, the peasant art was selected from one county. This because the county—Huhsien in Shensi—manifested 'certain good points, cultural and social, from which others can learn.' The good points specifically spoken of were mainly social: 'Their art production has a broader mass base, more people of more categories participate; many leading members of the county, communes, and brigades paint; men and women, old and young, paint.' The main cultural point was visual and inherent in the work: it was the boldly imaginative quality of the work. Not that the quality and the capacity for it were unique to this county, we saw examples of this capacity whereever we were in China, it is that more individuals were expressing it and expressing it more fully and freely; perhaps in mutual discovery of their creativity they felt free to be bold. In any event much of the work fulfils the desirable synthesis Ernst Fischer called for, 'freedom of the artist's personality in harmony with the collective' and at the same time is made manifest as an expression of the collective. This last accomplishment was one of the cultural points spoken of, the other most mentioned was that the show would inspire other counties and neighbourhoods to make greater effort. We saw it was also inspiring both professional artists and other amateurs to seek and have aesthetic insights.

The history of this movement in Huhsien was socially and culturally important too; it first started in 1958, the year of the Great Leap Forward. The professionals we spoke with told us 'the masses ignited it, it was spontaneous; the problem was that the revisionist line caused setbacks. But in 1964 when the Socialist Education Movement went out to the countryside they started again. They started by painting the history of the villages, of the poor families. It was really only in the Cultural Revolution that painting developed on a greater scale; the county is now in full tide . . . both culturally and agriculturally.'

Finally something special about what they are now doing has import in both realms. Painting in the evening and on

rainy days, teaching and learning from each other in study classes in slack seasons, they are celebrating every facet of their own daily activities: their construction of terraces and wells, their planting and harvesting of their varied crops, their schools, shops, and factories, their community activities from sports to entertainment to speak past bitterness sessions. They depict all with imaginative directness and vitality; the work for this reason is especially useful in the brigade, commune, and county in presenting information and propaganda in a compelling and inspiring way. They have painted their communal past history and their self-reformations; they now are predominantly occupied with celebrating their immediate present; we feel it is an important point that, though they may exaggerate forms, colour or pattern to express it, they find their present actuality inspirational and so does the viewer.

The professional artists and the amateurs working in the traditional skills were outspokenly impressed by the vividness, the liveliness, the inventiveness to be seen in the peasant art and avowed they had a great deal to learn from it. They were aware that the people—those for whom all their work is done—responded to these elements in the work too, which therefore they should seek to incorporate in their own. We discussed the genesis of these elements, along with many other questions relative to our quest, in conferences in Peking, Shanghai, Huhehot and Kweilin with professionals and with amateurs. Everywhere they felt they had the answer as to what made the peasant work 'more alive and innovative'; we felt the implications of their overall answer could lead to a broader, more self-searching dialectic. To them the point was the peasant artists had a deeper sense of content because 'they come from real life and are full of life and healthy ideological feelings', they had 'a better class feeling and fewer ideological problems.' The solution proposed by both professionals and amateurs was that the professionals improve their ideological selves by going deeper into the masses; this improvement would be reflected in the enrichment of their content and the greater vigour of their style. In Peking they specifically said, 'The peasants cherish the life they are living and painting so cannot refrain from reflecting it . . . they have an active, not passive, attitude . . . . in trying to bestow and reflect life, they have created new forms and have boldly broken conventions.'

This statement led us to think of many things; their social commitment led them to consider the ideological problem first, they were concentrating on that in what they said. We avowed that yes, the ideological content was very strong in the peasant art, that we had come to realize what a lack of social commitment had impoverished Western art and that an active social attitude is indeed integral to art. But we continued that we felt, if we further discussed the qualities they had singled out for approbation, the thinking could lead to consideration of other possible ways of raising standards which could be entered into simultaneously with the social one. In discussion, listening to their emphasis on content as one component entity to deal with (for which the peasants received high marks) and on skill (in which area the professionals undeniably have great mastery) the other component and in listening to what they said as to how these two should be wed, we came to feel that some possibilities raised by the peasant art were not being taken up by the professionals or the amateurs because the terms in which the problem was posed did not encompass these possibilities.

We felt what was being overlooked was a full enough consideration of the manner in which the peasant artists painted. Given when both groups painted the world of the peasant the peasant had the greater familiarity with the data and in one way more feeling for it, the social

feeling of the professionals was so high we felt the two groups must be equivalent, if differently so. Mentioning this to one group we pointed out that in that content does not express itself without form there must be something about the form in which the peasants expressed their statements that made their work so effective despite their lack of acquired skill; we thought something they did and/or perhaps something they did not do in regard to form should be considered.

This involved us in a problem which, though it might have been one of equatability of terms in translation, was significant as a point of departure; when we spoke of form or style or manner we were answered in terms of technique or media. Further it seemed that when our sense of form was considered it was felt to comprise and manifest itself in specific techniques which one mastered and turned into skills were set into or set up as a framework of a style which would be one of a series of styles selected as suitable for a given media or content.

It was, we felt, this concept of form as technique-turned-into-skill that led professionals to feel the greatest determining factor for them to consider in their raising of the standard of their art was the quality of their ideological input. This view of form seems to be reinforced in that many of the specific techniques they have had drawn from their own long and rich heritage are conventions which, as such, represent or symbolize specific items of actual or emotional content and which used in various conjunctions, one with another, can be held to make a statement. The prevalence in their art of technique as signifier tends also to lend support to their consideration of their overall solution as correct. This solution at this time could be summarized as follows: while developing their ideological selves to better conceive the content, the best way to master the new revolutionary content and raise their standards of that mastery is by seeking and devising and then perfecting new techniques to depict the wealth of new data and add them within the framework of their style. They then will be raising the level of expression of content by the mastery of accumulation of invented and critically-borrowed-to-be-transformed techniques.

While strongly emphasizing technical skill the artists are totally against formalism, against the use of style or technique for their own sake. Formalism is a form of subjectivism, they pointed out, also making us see that part of the dilemma of Western art is that progress is essayed by the continual opposing of one formalism with (what is or becomes) another formalism without sufficient consideration of the communication of content. Even though to us the emphasis on formal considerations was necessary for the birth of modern art—and we admittedly value that birth highly while they do not —we agree with them that the continuation of such emphasis is a major factor, in interaction with serious social factors, in the alienated quality of contemporary manifestations of that art. The intricacies of this must be developed separately; what is important here is that perhaps the professional artists in China eschew fuller interest in our concept of form too emphatically out of the faults inherent in Western over-emphasis of it; the same situation still pertains to a degree, despite the current stage of the Cultural Revolution, in relation to imaginative individuality in art, perhaps because of the dangers of individualism so evident in the West. Individual points of view are more prevalent in other sectors perhaps because it's easier to advance ideas in sectors wherein ideational innovation is considered for its efficacy in action and not as an ideological statement.

What they hold in contradistinction to formalism and what they are wholeheartedly and totally for is the necessity that art express revolutionary content, and that the artist follow the Mao

Tsetung prescription of a unity of political content with a perfection of art. In their enthusiastic pursuit of this aim, we feel that by their conceptualizing of technique and skill as subsuming and equalling form and by holding to this concept of form in their thinking about the expression of content, they were blocking the avenue to the overall spontaneity, to the inventiveness in the technique, to the innovation in form itself which, all together, is just what they and the masses were responding to in the peasant art. Even in their consideration and nomination of separate visual elements as admirable, their concept of form and the form-content relationship derived from it turned these elements into being only specific technical ones—like word units—to be refined and developed for the statement of content. The selected units served this role well, it is true (i.e. overall pattern expresses bumper harvest, perspective distortions show participation). But to us, they expressed these contents with force in the main because they were part of a coherent whole. Seeing the visual elements as translations of content in terms of sign language oriented the professionals to seeing the peasant artists' contribution in terms of content only. Then while prompting them to admire the peasant artists' innovations within form as content at the same time, this prompted them to see the remaindered side of form as only unskillful technique—so obviating in their eyes the peasants' possible contribution to form. To us, though sometimes in the successful paintings details were unskillfully achieved and could be improved—improved in terms of the form in which they were created even as it develops—as elements of form they complemented the other elements in such a way so that the content pervaded the coherent whole.

To the degree our view is valid, there is information of use-value in how the peasant forms evolved. It would seem that the peasant artists, not having a learned technique even if they do have access to and influence from a visual tradition, impelled by their statement as the professionals say, they invent as they go along—even breaking visually familiar conventions. Then it is as though in being fully familiar with the life they paint, and in wanting to celebrate it and in having eyes not so constrained by technical considerations, they perforce step aside from and often beyond the problem of trying to fit a statement into a specific framework. This leaves them open to creating a style into which to fit their innovations and this in turn leads to the accomplishment that their feeling pervades the whole painting and to the paintings having a coherent intensity.

This is not, of course, to say that skill, technique, and the discipline of form are not important to the development of art, nor is it to say that inventiveness and spontaneity are the most important elements in art. It's to say that what is important is the matter of the coherent whole— of wedding all into the coherent whole—which calls for an open dynamic concept of form. And it is to say that creativity is not the province only of those with professional skill, it is a property in each of us which can be and needs to be released, and which in the form of insights can directly contribute to the development of art everywhere.

The complexity of the problem of the proper relation between skill and discipline, on the one hand, and inventiveness and spontaneity on the other, was brought out in a paradox, contradictions of which were made clear to us by a statement of one of the professional artists in Peking. In the peasant exhibition we had seen examples showing where peasant artists seeking to raise their level had sought to raise their skill, they did it by emulation of the professional artists' skills. Their later paintings showed they had made considerable progress in this direction year to year, but to our eyes

spontaneity and inventiveness were meanwhile disappearing. Yet when the professional artists, lauding the evident increase in skill, said to us,'To like peasant art as primitive and to want it not to change is an unhealthy élitist attitude, the peasants do not want to draw inaccurately; it's unhealthy to want them to; it is by error that the proportions are wrong and the limbs mis-set,' we understood he had a point.

Bothered by the contradictions between our concern and this point of view, both of which we felt valid, we were forced to ask ourselves several new questions including: What indeed is the active cultural role of peasant art as 'primitive art'; How much has Western pleasure in 'the primitive' been cultivated by its cooption for profit in the art mart; How much of this is reverse acculturation and on the basis of what seen or sensed values; How can peasant art be sustained in its spirit and functions at the same time the peasant artists are aided to fulfill their wish to raise the level of their skill; How can this last best be done, what insights should be sought for, should some redefinitions be made?

From generalized considerations of these questions as touchstones, leaving specific answers for development elsewhere, our thinking went as follows: The cultural role of peasant art is multifarious, like primitive art it exists as a special cultural record, again like primitive art and also as itself it is a source of mass inspiration and education—including importantly the inspiration of the masses to create, to culturally participate—like other peasant art it is highly germane to the artists' need in the continuing process of development of the source of imaginative innovation in terms of dynamic visual conventions—something to utilize as a source whereby to adapt form to the revolutionary content. But how to best see and use this source was a complex question, one which we could only hope to help be posed so it could be successfully solved.

We thought a major proposition of this question lay in the values responded to in primitive and peasant art. We summed them up as having to do with ways of making the sensed but unseen, seen with a sense of psychic reality, a sense of experiencing the artist's experience. We felt this was achieved by primitive 'primitives' and untutored peasants by the use of directly meaningful techniques they had had to invent and for which, when successful, they had invented congruous forms suitable to their statement and their technique. Next it had to be considered that 'primitives' become sophisticated and still keep their éclat, their directness, and fullness of communication. How? From our amount of visual knowledge it seemed that as they—and all schools of art down to modern times that produced the new insights into objective reality from which, we feel, art develops—acquired new skills and innovative insights, the combining of these with content forced inventions of form—of new formal relationships—so that form and the techniques within it enhanced each other and made strikingly manifest the content (positive or negative) for which both were invented. The successful peasant art had this directness and these possibilities in it; it could be a source to transform and around which to invent—but with full social considerations—just as primitive and foreign art were a source for Modern Art in the West.

As we felt our way toward this thinking, we felt more and more that if the professional artists would give more consideration to the peasant innovations as technical, as techniques within a form, within a total picture which made them meaningful and to which they gave heightened meaning, they would have vital material with which to deal in two areas in which they were questing. They would not only have a whole panoply of insights as to different ways of making statements which they then could skillful-

A Valley Astir *Chin Chien-feng*

On a Tea Plantation

The Last Two Patrons

Chao Hung-wu

Fishing Vessels Set Out from Penglai *Chang Yen-ching*

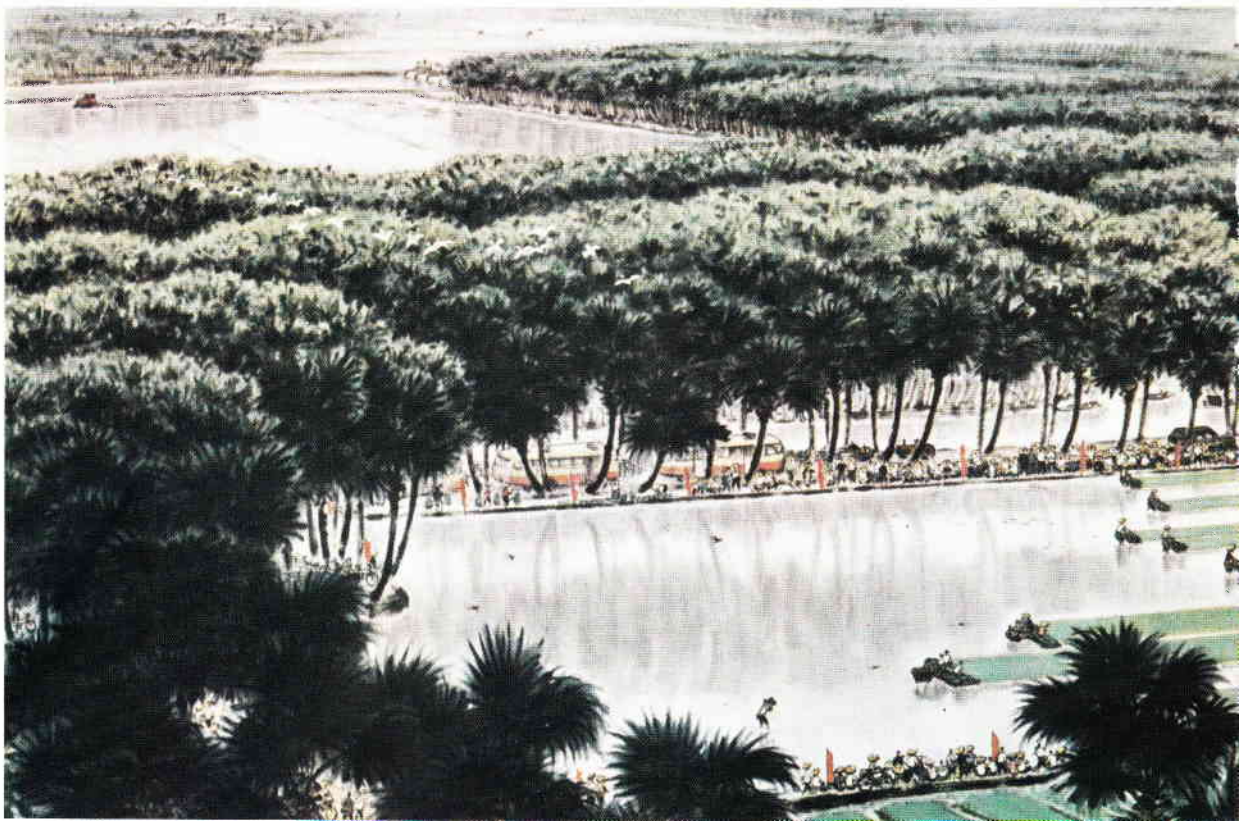
Learning to Drive a Tractor *Chou Jo-chu and Chen Lung*

Woman Party Secretary *Lung Ching-lien*

They Embroider Nature

The Doctor Is Here Again *Chou T*

Catching up with Time *Li Yeh-ping and Yen Sheng*



a-chen and Lin Chun-lung

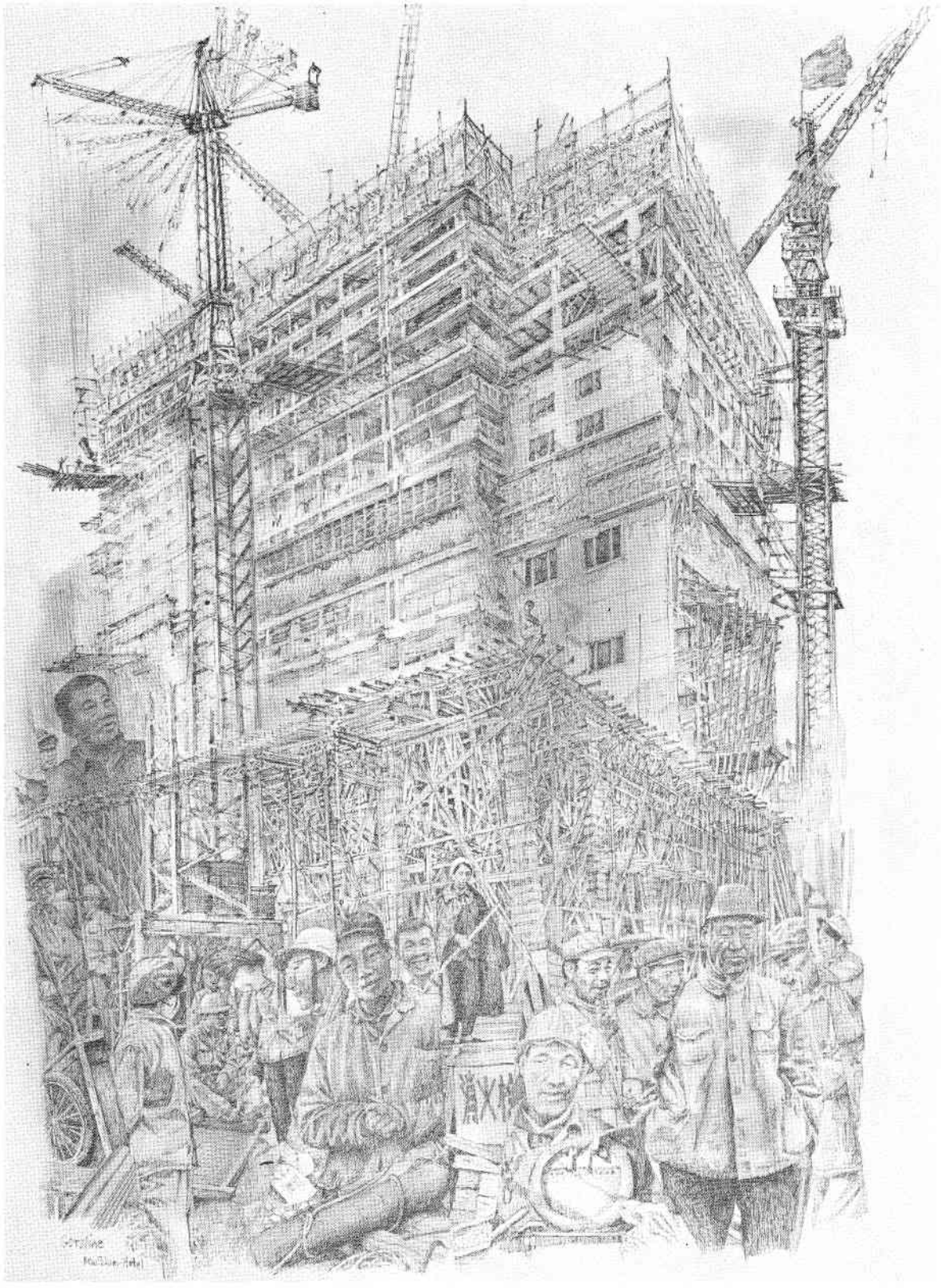
Octolateral Tower in the Chingkang Mountains *Sung Wen-chih*

A Great Wall in Green *Kuan Shan-yueh*

Voluntary Bicycle Caretaker *Hou Chieh and Yen Sheng*

On the South Sea

A Duck Farm *Lou Shih-pai*



Peking Hotel *Douglas Gorsline*

ly develop into and employ as their own content-expressive form, but they would have the beginning of an answer to our and their question concerning how best to help the peasant artists raise their standards. As they said, they had been thinking and talking about this among themselves and with the peasant artists since before the Cultural Revolution—there were several programmes in action. The talk about all this gave us a lot to think about.

While underlining the fact that it was a mutually held opinion of the professionals and the peasants that 'the peasant only uses simple and primitive techniques and should raise their standards,' they were intensely aware that there was a real question as to 'in what directions' this should be pursued; they wanted to 'create a situation for 100 flowers to bloom.' Further they made it clear that it was a matter of principle that the 'peasants should raise their skills in their own manner, they can't blindly learn from the specialists.' This certainly lays a genuine foundation for the fully developed interaction needed between the two groups; they are actively working on that interaction as is being done in every sector of life under the principle of taking everything up and down which, in the way they are doing it, we call back and forth.

The current emphasis by both groups on the necessity of achieving technical skill as primary, while diminishing the value of the peasant artists' innovations in technique and form to the eyes of both groups, and reinforcing the already present feelings of peasants and other amateurs that even should their class feelings be better 'they must look to the professionals for necessary skills and techniques,' can obstruct their efforts to achieve a full generative back and forth regarding the raising of the level of expression in art. Perhaps the two complementary attitudes could be seen as remnants of class contradictions such as people in all fields in China told us of as still existing and necessary to overcome. And perhaps the best way to approach the pro-

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(On opposite page)

Drawing of the New Peking Hotel: A suggestion made in theory and carried out in practice.

A suggestion we made in Peking that was considered valid ended in the drawing on the opposite page. We said we felt the professionals were missing a special possibility suggested by the peasant art and also by their own social thought: depiction of the actual life around them in Peking, this too being the active world of the masses. While they were going into the countryside and factories they were not painting their own milieu with which they were so familiar and in which we saw beauty to celebrate—the masses on bicycles at twilight returning from work in Peking, the construction work and workers at the site of the New Peking Hotel. We said we not only thought these were visions of social and aesthetic value, but in painting their own actuality artists would more easily achieve the directness they admired in peasant art and would more likely be inspired to be inventive in form. They agreed this was possible but warned that the subject had to be chosen carefully, that what to celebrate had to be chosen from a social point of view. We felt and said the beauty of what is everywhere here that we see now is important; to us it is a testimony to the beauty and vigour of the socialist life. Douglas decided to make a test of his proposal by painting all that was there at the Peking Hotel construction site.

While at work, we were singularly struck by the self-sufficiency involved, particularly by the derricks constructed from photo reproductions in foreign publications which were made and put in operation even before the drawings to guide their construction were off the drawing boards.

S. Marie Carson

blem is in terms of class orientation; perhaps such an approach could reveal the next necessary questions. Probably something along these lines is already happening, because, as we were told so often, 'we are still in the process of development.'

And that is a part of the whole marvel of the People's Republic of China. Everything, everywhere, is in the process of active development. Among all else, the professionals' reaction to the peasant art, their seeking for processes to raise their own standards and to aid the non-professionals to raise theirs, are all in process—just as is the building of a responsive representative cultural administration from the provincial level on up.

It is a very hard task, the raising of aesthetic standards, especially on a group level. And that is more the question than the one we all think of in the West—the ideological one—that creativity cannot develop under ideological constraint. We all create under ideological constraints whether they are primarily self- or socially imposed and all our acts and decisions are ultimately political and politically formed, even when we mean them to be a-political. While many of us are not aware of our most active formative ideological constraints, their main ideological imperatives are directly stated, discussed, and agreed to; the agreed upon constraint in the cultural domain is to create for the workers, peasants and soldiers in a way responsive to them and extolling of their work; this is a large but not impossible commission—it's a matter of finding the most creative way to achieve the aim.

There is a lot more to be discussed. But their aim, their unceasing efforts, their constant self-criticism, their willingness to listen to critical suggestions from outside provide a marvelous climate for both discussion and achievement. It was a privilege to be able to start the dialogue and an excitement to hear, and hear about, our first suggestions being discussed. There were and are gaps in comprehension to bridge, but the dialogue has begun. We hope it will continue and that many others will participate; we will continue by writing, we feel compelled to by what was said in their farewells as summed up in one: 'We are colleagues, we must help each other, we are glad for such an exchange; it was necessary it be started; through dialogue we can raise all artists' standards and strengthen friendship everywhere.'

China Revisited

William Sewell

'*Dsai chien*—see you again.' The words were ringing in my ears when, in 1952, I crossed the bridge from China to the Kowloon train. I was too realistic to gain comfort from any hope that I might return. After nearly three decades, my life in China was over! Then, this year, the opportunity came for me to revisit China with my wife. Unexpectedly I felt a slight reluctance, perhaps fearing that my dreams might be shattered by what I might discover.

As the train took us from the border towards Canton, we looked at the new rice greening in fields which were so much larger than those we remembered. On the window pane, a couple of flies suddenly came buzzing. Perhaps like us they were visitors from Hongkong; but somehow they were comforting, although we were to see no more. A young girl came along the corridor in her white coat and black trousers, her smile so welcoming, her dark eyes sparkling. She was wiping the floor with one of those Chinese mops which, unless very skilfully used, leave as many marks as they remove. Fifty years ago our Chinese helpers had used mops just like this one; and here, after all these years, this charming girl was swishing one up and down the corridor. Happiness flooded over me: We were home again.

We had returned to China, but everywhere there were changes. In Peking there was the great open space before Tien An Men, the love of which young people were singing wherever we went. There were not only the great national buildings, but countless modern homes for workers springing up, often near newly erected factories. In the country places much of the land was smoothed, the small hills and mounds removed, the hollows filled in; the narrow borders between tiny fields had vanished to enable tractors to work great areas. New irrigation channels, some filled from wells by electrically driven pumps, others from new reservoirs or freshly diverted rivers, served all parts of the land. Good roads made transport easier; and the trees that lined them had many of them already grown sufficiently to give refreshing shade. As the farmers took us round, it was not so much 'see what we have done', as 'see what we are doing'. What had been accomplished was well done, but much was still to come. Because all had shared in the progress they had made, every person felt involved and was determined to continue and develop the work which they were doing.

Statistics were poured out to prove the reality of the many achievements; and, like other visitors, we noted them for future use. Yet what we remember are

William Sewell was professor of chemistry at West China Union University in Chengtu until he retired in 1952 and went home to Britain. He and his wife revisited China recently.

the faces and attitudes of the people, which reflected the emotional significance of these facts and figures. So short a time ago, many of the older people, who told us proudly of their work, were destitute, largely demoralized, hungry and ill clad. It is the triumph of the way of life they have adopted, and of their changed attitude to each other, in their determination to serve the People. We spoke of our Western conception of freedom; but it was deemed irrelevant, and there was lack of understanding on their faces. In return they asked if our freedom should not more truly be considered licence. One woman said: 'Previously I was hungry, and had the freedom to starve. Now I have food to eat; my children can go to school, and we all have sufficient clothes to wear.' During our half-month visit we saw no one obviously lacking food or clothing. While it was still China, it was a new China, its charm enhanced because it was no longer marred by bitterness, deceipt and misery.

Whether we were taken to farm or factory, school or welfare organization, after we had been told the history of the project, there was always a fruitful tour of inspection before returning for frank discussion. As we walked around we were able to get away from the official leaders, and the worthy members of revolutionary committees, to discuss with the younger men and women, or the older folk, how they were feeling about life, about the jobs they were doing, the changes in their family circumstances or the progress of their children. Although enthusiasm may have varied slightly with age, yet all were unaware of the fact that to my bourgeois mind there was a price that they were paying. It would be foolish to pretend that the lives of the friends we met are easy: the new society is being built by constant hard struggle, both physical and mental, perhaps especially the latter for it is far from easy, and indeed may be agonising, to overcome selfishness and accept that privilege and personal advancement must be forgotten. Both the nature and place of work are assigned according to need and the expected capabilities of those concerned. Although it is possible to make alterations in case of real misfits or of special circumstances, frivolous requests for change are not entertained. There are limitations, also, to travel; and permission must be obtained for more distant and longer visits, although crowded trains bore witness to the fact that many people were on the move. Higher education can be obtained only by those who, after working on the land or in factories, are acceptable to their fellow comrades; and this means that they must not only be considered likely to benefit, but must be politically sound. It is impossible to imagine how China, with her many millions and seemingly insuperable problems, could have accomplished so much, so quickly, except by this strict control, which is accepted. For the sake of the People, for they do not think in impersonal nationalistic terms, they work hard, assent to exacting discipline, and are content with insignificant personal rewards. Their standards of unselfish behaviour are unbelievably high. The Chinese humanistic philosophy, their experience of the extended family, and the extreme poverty and despair which they have endured have helped to make their present life possible. The alternative would have been to sink into utter chaos. No one we came across could imagine the possibility of returning to pre-Liberation conditions.

In the communes human nature was at its best. The people were natural and entirely friendly. The younger and stronger men and women were in those teams that did the hardest work; but a group of grannies, working together, taking their time, gossiping and laughing, presented a picture more pleasing than any we could have imagined in the old days. There was obviously no pressure either on a gang of old men, resting on their rakes, waving as we passed, and smiling to each other. I must confess that I have

forgotten most of the statistics we were so proudly given, but the memory of these happy older folk remains vividly with me, a more convincing argument than any percentage of increased production.

At the Chiliying Commune, flies again became significant. There were 1,045 pigs, and that figure I remember because we saw the whole multitude in their ingenious sties. The earnest young woman who told us about them wore a yellow and brown patterned jacket, and had bright green socks peeping out below her black trousers; she played with a wisp of black hair, hanging down over her cheek, as she spoke. So truthful was she that I am sure the statistics would have been amended had a sow farrowed while she was talking. Her story was one of dedicated care and planning. It was one of the outstanding wonders we saw, that in that whole area, which she so proudly and lovingly tended, there were neither smells nor flies.

We stayed a few days at the Shanghai Mansions. Decades ago we had watched this high luxury building—then Broadway Mansions— being built behind bamboo scaffolding. We, in our humble circumstances, had shaken our heads a little and wondered who could afford to live there, little thinking that, even for a day or two, it would, in a new China, be ourselves. From the twelfth floor we looked down at what was once the Garden Bridge, under which the Soochow Creek flows to join the Hwangpoo River. Across the creek are the gardens of the old British Consulate and, almost next door to it, the church now used as a garage. In the early morning the solitary men came to do their exercises, but soon the traffic swelled: buses hooted, bicycles in their thousands came from all directions, the riders dismounting at the bridge to walk along the pavements, threading their way among the pedestrians. The Bund was much greener with trees than it used to be; the familiar buildings, in their long curve, were greyer and put to new uses. There was constant movement on the busy river, strings of barges, laden with produce, came and went. There were big ships too, but no longer the humiliating line of foreign gunboats. China has regained her self-respect; the people have indeed 'stood up'.

We looked down at the familiar garden —now made into a small park, the Hwang Chen Hua Yuan—at the junction of the rivers. In 1924, when we first walked there, we had already been told of the sign 'no Chinese or dogs admitted', and had gone specially to see it. The notice, which I copied, was signed by the Secretary at the Council Room, and dated September 13, 1917. It was headed *Reserve Garden Regulations*, and stated *The Gardens Are Reserved for the European Community*, but there was no mention of Chinese, except that amahs, accompanying foreign children, were asked not to occupy the seats when the band was playing. Ball games and the picking of flowers were prohibited. Regulation No. 4 was *Dogs and bicycles are not admitted*. One can understand the Westerners in those early days who, in the hot fetid Shanghai summer, before there were ice cream or air conditioning, sought to breathe the cooler air by the riverside, away from the crowds of people, some of whose habits, by modern Chinese standards, were hardly sanitary. Yet it was wrong, reflecting an imperialistic attitude and naturally, as public conscience developed, the gardens ceased to be reserved. The myth about the wording of the notice has, however, remained, and needs correcting in the interests of truth. The actual wording is bad enough, but the story has been repeated so often that many, both in China and elsewhere, believe that the supreme insult of directly

linking Chinese and dogs together actually occurred.*

In those cities we visited and in the countryside, the greatest change of all is in the thoughts of the people and their attitude to life. They have new values: their purpose to help each other, to secure the greatest benefit for the largest number, to forget self in the new security. This attitude is fostered by education focussed on this aim, by the slogans and quotations that are everywhere, by constant discussion, and mutual criticism and encouragement in the small neighbourhood, farm and factory groups. The people are dedicated producers, and, unlike most Westerners, are not subject to pressure, by advertisements and from shops and manufacturers, to become consumers. Also they are natural examples of men and women as they should be, without the artificial erotic stimulation which adds such strains to Western life. As elderly, white-haired visitors, remembered as teachers, it was humbling to be caught up in the new spirit. There seemed a conspiracy to give us security, to see that we did not stumble or grow weary. We were '*Lao Pung-yiu*, old friends', but our friendship has now a new dimension. As teachers, as was the custom in the old days, we mostly gave, but now it is our turn to receive. Although the Chinese experiment is not blindly to be copied, and would hardly fit the British scene, yet there is much for us to learn: new ideas and relationships, a truer balance between the individual and society, a willingness to forget personal rights and privileges in accepting new responsibilities, and a realization of the evils of a class society. We were certainly impressed by the undoubted successes, by the productive power and drive, yet the outstanding memory which we have carried with us from China is of dedicated millions who possess enthusiastic hope.

This time as we crossed the bridge to the Kowloon train, the call that followed us was not '*Dsai chien*', but perhaps because there is a deeper sense of reality and truth: '*Yiu chi wei, dsai chien*—Should opportunity occur, see you again!'

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* For confirmation of the above refer to *New China-A Report of an Investigation* by Col. C. L'Estrange Malone, F.R.Ae.S., published in September, 1926, by the Independent Labour Party, London. One of the illustrations is of the signboard, with the caption 'Shanghai. Notice in the Municipal Gardens, excluding Chinese, dogs and bicycles (taken May, 1926).' This very properly omits the quotation marks. On the notice the words 'no Chinese or dogs admitted' do not occur.

New Discoveries Amongst Old Haunts in North Hopei

Rewi Alley

Summer of 1974, and North Hopei seemed to be a great tall, wide, green sea of corn and sorghum, which had sprung to life following the wheat harvest. There had been good rains all through the mid summer period which had helped with what promised to be the best grain harvest of any year since Liberation. Late autumn and there were a succession of bright, sunny days which also helped the by now ripening corn considerably.

We had come to Peitaiho on the coast of the Pohai Bay for rest and recuperation, so were feeling glad to be able to make another tour of inland counties, and see how progress was affecting them. Although one cannot easily enter into the lives of the people on any fast-moving trip, one can at least use one's knowledge of what things were once like to appraise what is being accomplished today in the expansion of county-operated industry to serve local agricultural mechanization, an essential step towards the integration of industry and agriculture. We also hoped to see something of the planning and investment aspects of rural development, and to see to what extent they were being highlighted by the current 'Criticize Lin and Confucius' movement. For any one interested in human progress, there surely can be no more exciting a thing than to watch rural development on the scale it is in China today. The revolution is being continued quietly yet irresistibly by a people who progress politically, technically and economically not only in the richer areas but also in rugged hill hamlets, and poor lands. In pleasurable anticipation, then, we set off by train to the prefectural city of Tangshan, making it the starting point for our excursion into the countryside.

Ceramics in Tangshan

It is a mistake to think one visit to any place is enough in today's China. I had been to the Tangshan potteries quite a few times over the years since Liberation, but a visit in August 1974 showed almost a completely new picture. To begin with, the first known kilns of the Tangshan potteries were started in 1404. Now they cover quite a large area of the city and suburbs, in fifteen sections. The overall organization for all runs four schools and a hospital, and has 11,500 workers, making domestic porcelain, industrial porcelain, and then exporting wares, in over five thousand varieties.

Before 1949, the potteries were owned by families or small capitalists. There was a busy season in March and April,

but after the bulk of the pottery needed for local distribution or orders had been finished, many hired potters had to go out on transport work, or even become beggars. Costs were high, production methods primitive, and the old system did not let the exploited workers get off their feet. In all there were only 26 old-type beehive kilns then.

In 1949 these kilns were joined together in an enlarged state enterprise, properly financed, and with the beginnings of mechanization. A total of 9,360,000 pieces of ceramics were made that year. In 1958, this number had risen to 21,270,000 pieces, and by 1966 to 63,000,000. In 1973, 101,000,000 pieces were turned out, which score will be sharply added to in 1974. Actually, the potteries cannot meet all the demands now being made on them. Before Liberation, a rural family would not average more than two bowls per person. Now comes the demand for different bowls for different kinds of foods, tea pots and tea sets, specially nice tea cups to be used when guests come, and proper wine cups are all demanded. Things that once only rich peasants and landlords would have, and usually not very good stuff at that. We visited the exhibition rooms of the factory, seeing the kinds of pottery made and used locally in Warring Kingdom times, then some of that of the Sung period, which recent excavations have brought to light. Then, too, several cases of the pre-Liberation stuff, which was coarse and crude compared with anything of today.

Visit to No 2 Pottery

Previous visits had been to potteries close to the city centre. This time we went out to the largest, Number 2, which is situated in the countryside quite a few kilometres from the heavily industrialized portion. It is contained in a big compound, with large, roomy workrooms, where 4,417 workers, 621 of them women, produce around 24 million pieces of porcelain a year.

Before 1966 there was a good deal of economism here, workers being more or less bribed with prize money to produce more. In the Cultural Revolution there was a universal demand that this practice should cease. Moral incentive now rises high over the material one, and workers obviously are putting their whole heart and soul into the work in hand. Workers take part in the administration enthusiastically. Wages average 55-60 *yuan*. The rent of one room in the staff quarters is one *yuan* a month, including light and water. They have recently been provided with new bath houses for each sex, and are issued free with soap and a fresh towel each month. Workers' innovations which have come into daily use number over 120, some of them quite outstanding. We especially liked the automatic pouring device, that fills moulds then turns itself off until a new mould comes into position under it. The only manual work here was that of the worker opening up the moulds to take the shapes out, after the drying process was completed. Another device turns out plate shapes several times as quickly as before. 'Come to Tangshan again next year and visit one of our other potteries,' cadres invited, and we hoped too that this would be possible.

To Tsunhua County Again

It had been hot, but during the night the wind changed to the north-east, and heavy rain fell, so that in the morning as we went away from the new city of now over a million people, the air was clean and fresh. New highways and a railway, new construction, new bridges were being built. We were going out of a new big industry centre, over a wide macadamized highway a mere seventy kilometres long to one of China's centres for rural industry, Tsunhua county, which has come up from great poverty to become one that has creatively applied

industrial techniques. A county, the home of the famous Shashihyu commune brigade, which is after Tachai, a pace-setter for poor and bad lands everywhere, and too the home of Wang Kuo-fan, leader of the ex-beggar group that has changed the face of the Hsipu brigade land from desolation to richness. Wang Kuo-fan still remains in his brigade, but he is also county Party secretary, and occupied with other high level positions. Tsunhua county is the place where many come to learn what can be done with very little, when a properly organized people take power into their own hands. While we were here, several cars of African friends from Peking came in. There are very few countries in our world today that have not had at least some of their people come to this rural model of self reliance.

The County Exhibition

In the bustling county town of Tsunhua we first drove to the old city god temple, which has been converted into an exhibition hall, with ample room space for specimens of all the county has to show. The county of 578,000 people is organized into 43 communes, and 692 brigades, and was vividly portrayed in a relief model with coloured lights showing up significant places in mining, industrial, and agricultural work. All along its northern boundary, the Great Wall ran over the craggy mountain ranges. A county of hills and valleys, once the poorest of the poor, but now becoming a changed place in every way. In one rough hill valley, Hsihsia Ying, was planted the same kind of Red Flag as that over Shashihyu and Hsipu, and on inquiry we were told it was a place where forty soldiers had gone on discharge, and through their work there had made it into a model. Some 170 of the commune brigades have geological survey teams, and twelve kinds of valuable minerals have been found in quantity, iron, coal, copper, gold and silver amongst them. From mining operations, the county has been able to buy 1,500 big 'East Is Red' tractors, 8,000 small tractors and 10,000 pumping units. The county smelts 3,000 tons of grey iron a year in its smelter, and 1,700 tons of ordinary steel (No. 45 on China scale). A feature of this county, we were told, is its ability to make use of waste material, processing it into such useful things as buckets, and then in the handicraft section, on to artistic iron pictures for export. The county pottery concentrates on making pipes for irrigation, and refractories for other industry. The new cement works already produces 12,000 tons a year of cement (400 on Chinese scale of grade). It also turns out porous well pipes—30,000 metres in the last 4 years, cement roof tiles and electricty transmission poles. Amongst the machinery that has been devised is one for stamping out the earth cones to plant early cotton transplants in.

Out of the 63,730 hectares of arable land in the county, most of it hilly, 34,670 hectares has been irrigated. Eighty-four per cent of transport has been mechanized, and 90 per cent of the food processing machines. Fifty-five per cent of harvesting, and 58 per cent of plowing likewise. Both nitrate and phosphate fertilisers are made, enough to meet local demand. Tyres for horse-cart wheels, tractors, and trucks are re-treaded locally, and enough paper is made in the local paper factory for the county.

As it is a slogan to prepare against war and natural disaster, parts for the rifles of the militia and hand grenades are made, as is the remote-control equipment needed to explode mines from distances up to 1,000 metres.

Thirty-six of the communes have good handicraft work, making such things as tool handles, shafts for carts, in all 3,200 shops all over the county. All kinds of basket ware is turned out, mats woven from corn leaves, marble in a deep brown rich colour cut out in square

blocks and sent for polishing to the cities. The glass works turns out the various kinds of bottles used locally, including those for the canning industry. A hunting team brings in the skins of many animals for marketing, as well as eagle feathers that go to the export trade. Medical herbs are grown, and a start is being made with producing ginseng, and other herbs. Together with the wild herbs collected, this runs into 170 tons a year. A total of 1,180 tons of walnuts and chestnuts are sold, the annual income from all of these being over four million *yuan*.

Some Agricultural Figures

This 1974, there are 350,000 pigs in the county. A big effort is being made to see that, in 1975, the target of one pig per person will be reached. With new trees now coming to mature bearing, it is hoped that 2,150 tons of walnuts and chestnuts will be harvested in 1975. At that the income of 54 *yuan* per person will be raised to 80 *yuan*.

In 1949, 1.12 tons of grain a hectare was harvested. In 1952, 1.6 tons. By 1955, this had risen to 2.31 tons, reaching its programmed rate of increase with 3 tons in 1958. Then for eleven years it stayed about the same, the highest rise being but 37.5 kilos a hectare, why?

Internal Struggle

In 1968 Chen Po-ta, a then leading political figure, came with various impracticable ideas, cutting down on the number of brigades, cutting out private plots, wanting to pull all pig raising under the brigade, all of which made for a big upset during the end of the movement for socialist education in the countryside, and in the early stages of the Cultural Revolution. In 1965, the wife of Liu Shao-chi, Wang Kwang-mei, whose line opposed the 'Learn From Tachai' line of Mao Tsetung, had sent in her '21st Team' into Tsunhua. She gave it the duty of knocking down the leadership of all vanguard brigades, including Wang Kuo-fan's, which they proceeded to carry out ruthlessly. All of this took time getting over, for the confidence of the people had been shaken. However, by 1970 better leadership and organization had come back, and 3.77 tons a hectare was gained, the largest in history. This increased each year, and wheat was planted for the first time. In 1973, the state suggested a figure of 35,000 tons for grain to be sold it. Actually 51,500 tons were. In 1973, also, came the movement to sink wells, for often in springtime land has to depend on wells, and what water that has been retained in reservoirs from the previous summer. Some 7,500 wells were sunk, and 5,200 of them mechanized. Wheat and corn were often planted in strips, then with the wheat harvested enough time being left for the corn to ripen before the first frosts. The county can count on only 180 frost-free days, and wheat takes from 90 to 100 days, with corn longer. Another way was to plant kaoliang after the wheat crop, there then being sufficient frost-free time for that grain to ripen. This was how the stagnation of harvest yields was eliminated—a stagnation of only 37.5 kilos per hectare increase in eleven years!

The Knitting Factory

We made a round of some of the many local small factories, of which there are around a hundred. The first visited was a knitting factory, very efficiently managed, which made the best use of the old housing it had taken over. Started in 1954 by 12 local workers, who worked with some hand-operated machines, the workers went without wages for some months in order to accumulate enough capital to progress further. Now it has 356 workers, 270 of whom are women. Last year they made 1,300,000 pairs of socks, 960,000 pairs being of artificial fibre.

They also made 100,000 medium-sized towels, of the kind used to cover pillows. Their production was valued at 1,600,000 *yuan*. Workers averaged 35 *yuan* in wages per month. Medical aid is given free. In 1974, they expect to over-fulfil their plan for the year. Nine of their machines were made locally. The leading cadre, a fine middle-aged woman, told how well the current 'Criticize Lin and Confucius' campaign had raised morale. The women workers saw it as a thing against the superiority of men in everything, against the idea that only those with learning should rule, and against the Lin Piao concept of 'restraining oneself to return to the rites,' to restore the old society and capitalism.

Food Processing

We went to the food-processing factory, finding it to be one set up in 1958, cut back in the Liu Shao-chi period, and then starting again in the Cultural Revolution. It has 164 workers, 20 per cent of whom are women. Its gross product is valued at 1,270,000 *yuan* a year, and consists of canned fruit, dried fruits for export, wines, sauce and vinegar. In all, 17 different kinds of products. Like other local factories, there has been a good deal of extemporisation. It would have cost 7,000 *yuan* to buy a new machine for capping jars of preserves. Fitters got together and devised one which cost them 30 *yuan*. Girls on the work benches compete in gaining totals for preparing fruit. One of them can core 100 kilos of crab apples (*haitang*) in a day. The surplus from unsuitable fruit goes to make spirits or vinegar. The fruits for the factory are all grown in the surrounding communes.

Machine Repair Works

We went to a machine repair works, finding it to be one started as a cooperative in 1952, and then taken over by the county in 1958. It has 234 workers, 62 of them women, all with an average wage of 42 *yuan* a month. In 1973, the value of their production reached 1,200,000 *yuan*. The plant not only repairs county and commune farm machinery, but has a production line for commune-needed machines. One popular speciality is an air compression pump with its own power for inflating tyres of commune carts and tractors. The plant occupies quite a large area and has plans for expansion in the near future.

Electronic Parts Factory

A somewhat similiar plant was the electric parts factory, which has 210 workers, 75 of whom are women, amongst whom I was pleased to see an old comrade who had been a guesthouse worker on two of my previous visits, and who now has been a lathe worker for the past four years. It is surprising how much electrical equipment a growing county like Tsunhua needs in its forward stride. How many electric motors, bearing assemblies, how many machines that have to be repaired. Small agricultural machinery is also turned out, and a workers' team goes around communes to see what the requirements are, often mending motors or pumps on the spot, in the meantime teaching commune members how to do such jobs themselves. Workers continually make their own innovations. For instance, a 21-year-old lad, an educated youth from the city, Sun Su-ru, had the task of fitting driving wheels on to harvesters. The thick pin with rounded ends which fitted into a slot had to be filed true, and the operation took considerable time and effort. He worked out the method for getting the pin stamped out on a punch press, his product now fitting like a glove into its slot. Before, he said, it took him fifteen minutes to turn out one, now he can make fifteen in a minute. Last year the plant turned out 2,900 machines or motors, and repaired 14,000.

Like many other rural machine shops, they started with bicycle repairs, workers banding together and then going from bicycles on to repairing rubber-tyred horse carts, gathering enough strength to buy their first machine tool, and going on from there. At first, country folk with no experience did not see the use of machines, but as their political education progressed, and they began to feel that power was really in their hands and with that power its responsibilities to the revolution, they soon began demanding better mechanization all the time. In the machine shops, as soon as workers there got the first essential machinery, they could build all other machinery they needed by themselves. Of their 75 machine tools, 56 are made in the plant. They have not had any high-grade technicians to lead them, but by doing and studying, many workers have reached a good technical level. Not all workers are fools, and not all technicians out from city schools have all the knowhow, they say.

The Cement Plant and Other County Figures

Not all the county industry is small. On the border of the neighbouring Fengjun county, we passed the Tsunhua cement factory, finding it to be a medium-scale modern plant, with extensive digging into the limestone hills in its back yard. Coal is in short supply in Tsunhua, but now with a railway and a broad macadamized highway connecting with coal rich Tangshan, that problem is not great.

We spent an evening with the responsible leader of Tsunhua county. He told us that they had 1,100,000 hectares of land in all, 513,300 hectares being hills and mountains, 218,670 hectares downs, relatively flat land accounting for the rest. Wheat is now the major crop, 33,300 hectares being planted in it. Either as first or second crops, corn comes next with 26,670 hectares, then kaoliang with 13,330 hectares. Sweet potatoes are grown on 9,600 hectares, peanuts on 4,000 hectares and cotton on 5,867 hectares. Some 3,330 hectares go into millet, and 1,867 into rice. Every effort is made to make the land produce to its utmost during the whole 180-190 day growing season. The big change is in wheat growing. In the early days of Liberation the state would allow each family 1.75 kilos of wheat flour to make boiled dumplings (*jaotze*) for the new year's festivities but now people eat flour as they wish. Grain production over the whole county, averaged 4.8 tons a hectare in 1973. This being a much better year, it will make for a considerable rise in this figure.

As for population planning, births stood at 2.1 per cent but, by 1974, this total had been reduced to 1.5 per cent. In 1975, it will be further reduced to 1.2 per cent with modern birth-control methods. The people now cooperate well in this.

At the beginning of the Cultural Revolution there were only 24 small factories. In the last five years, however, things have really gotten under way with local small industry. The exposure of the ideas of Liu Shao-chi, Lin Piao, and lastly the stirring of people's minds that has come up from the movement against Confucian thought have urged people forward. Small industry has been capitalized by the county with twenty-five million *yuan*, while the total amount of loans taken for the same purpose from the state has not exceeded 2,400,000 *yuan*.

To Maliangyu

We set out one morning to visit the Eastern Tombs of the Ching dynasty in the north-west corner of the county, where the soil is generally light and sandy. To dodge some new reservoir construction we took side roads until we came to the town of Maliangyu with its picturesque pagoda, and its hoary old gateway with trees growing on the battle-

ments above. It was market day and the streets were full of bustle, trucks, horse carts, donkey carts, and country folk who like the excitement of a crowd at times. I had once taken a holiday and had lived among the Eastern Tombs near by, passing through Maliangyu at times for a dip in the hot springs near by where once a dowager Empress of early Ching was wont to go from her Maliangyu residence. On this trip, however, we drove straight up into the compound of what had been an ancient temple compound, but which now was that of a machine repair and agricultural machinery works.

A Village Machine Shop

Some of the old temple buildings were still in use, others had been cleared away, and bright new shops erected in their place. The leading cadre was anxious to get his message home, of what were those things which had so raised the morale of the workers that they had built up their plant from the early stages when they had to rent a donkey to turn their first lathe, had been able to survive the onslaught of the Liu Shao-chi period when cutting back was the order of the day, and how now they go ahead not only to build 500 sets of harvesting machines, but also to fill orders for tractor parts from city factories. And as one looked at them, with the background of mountain and fir trees behind the town, one realized what an enormous potential there exists in China for putting rural manpower to work on machine part construction, and in spreading industry all over the land. There were once 40,000 Manchu Bannermen living around the Eastern Tombs, Bannermen who had to be kept in idleness by the state. Other minority people also congregated around Maliangyu, but all of these have now dissolved into the population around, speaking only the common language, and retaining but few of their old customs. I talked with three Manchu lads and three Hui lasses who were workers in the Maliangyu machine shops, it being obvious that they all got along very well together and with the Han majority workers. Like other Tsunhua machine shops, this one sends out workers to assist commune brigades and communes to set up their own repair shops, thus linking up the beginning of a network of industry covering the whole county, a first step towards agricultural and industrial integration.

Commune Gold Mining

After looking at the machine shops in Maliangyu, we went along the highway for a while, until we saw a mat-shed covering two big stone rollers, that were being operated by an electric motor. Near by there were a number of commune men shovelling sand. In all on the spot were around fifteen of them, mostly oldish. What were they doing? On investigation we found they were grinding chips of quartz taken from a vein in the hills behind, then extracting gold from the sand, the dust being smelted into bars in a simple furnace set under another mat-shed on the hill behind. Their production in 1973 was over 500 ounces and their aim for 1974, 600 ounces. Sold to the state, a good deal of revenue accrues to the commune, and the bright new tractor which has been straightening out and deepening a mountain stream near by is part of the fruit of their labours. The marble chips are brought down from the vein by cart, and this is but one of the little commune enterprises that get gold, silver, copper, and so on. Water for the project is pumped up with an electric motored pump from a stream near by to a tank above the work. There are no precautions against theft needed, and everything is open to the air. When watching them I thought of the struggles of the overseas miners up in the mountain ranges of South Island in New Zealand, far from home, and in cold, bleak surroundings,

where gold was more important than men's lives, so easy to be taken by thieves and robbers who haunted the gold fields. In this small mining venture, including the miners in the hills and the transport bringing the chips down, not more than fifty commune members were employed. The big stone rollers are the same as those used two thousand years ago, but now redundant in the modern commune brigade. The electric motor is quite new. It has been from mining ventures, of which this is a small example, that has come a good deal of the capital the county has accumulated. This provided the capitalization for its small industry. Silver as well as gold is smelted here. There is copper also, but not enough here to make smelting worth while.

The Eastern Tombs

Leaving the little gold mine venture, we drove on to see some of the tombs of Ching dynasty emperors. With nothing very new to be seen here we drove on past the glittering golden tombs of K'ang Hsi and Ch'ien Lung, now with new forests growing around them in place of those cut after the 1911 revolution. We found that repairs were going ahead to the tombs of Tze An and Tze Hsi, the two Dowager Empresses of the end of the Ching dynasty. The richest tombs, those of K'ang Hsi, Ch'ien Lung and Tze Hsi, were amongst those looted by the Northern War Lords. Then followed depredations by the Japanese occupation, and the incoming Kuomintang. Enough has been seen of the tomb of Ch'ien Lung to show that it will be well worth excavating properly some day, there being much impressive wall sculpture there. The whole area of the tombs is one of great peace and quiet, with the good smell of cedars and pines in the air, and the stirring sight of majestic mountains beyound.

While at Tsunhua I wrote the following lines;

Could there be a place
where sunflowers grow higher or
more splendidly than
in Tsunhua? Tsunhua,
a hill county with a background
of mountains over which sweeps
the Great Wall, sturdily;
the county city an old one
with still a few vestiges of
its ancient wall; a place in the past
noted mainly for its poverty
but now, in the new day, famous
for its ability to stand on
two legs, agriculture and industry,
and for its Red Banner brigades
led by the now famous Shashihyu;
steadily the process of afforestation
and irrigation of dry lands goes on;
new reservoirs carry their promise
of help in the fight against nature,
and in Maliangyu, where once
an empress held her little court
and took baths in the hot springs near by,
new machine shops turn out
agricultural machinery, and the sons
of Manchu Bannermen work with Han
brothers at machine tools turning
out tractor parts; shades of bygone
emperors flit through the halls
of their golden tiled mausoleum
and the laughter of happy children
rises to where birds
fill new forests with their music.

Yangshan Brigade in Fengjun County

The time for us to leave gallant Tsunhua came too quickly. We drove down the highway to where Fengjun county starts, and were met by some of the county cadres, who told us something of their county of 630,000 people and its 46 communes, and who reminded me of the visit I had made to Panchiayu, the village in their county whose inhabitants were decimated by the enemy in the anti-Japanese war. I was pleased to hear of its fine progress since I had last seen it, regretting that I did not have time for a repeat visit on this occasion. Then we went together up a side road to the hilly area of the Peihsia Chuang commune, in

which is another famous vanguard brigade, which we were the first foreigners to visit. It was called the Yangshan brigade, and once was one of the poorest of the hill villages of Fengjun county. Then treeless, it was cut into deep gulches—seven hill ridges, nine valleys and eighteen hill slopes made up the lot, as people said. It had 530 families, 2327 people in all, with a work force of 1,350. Of its 311 hectares of land, 281 is hillside. The last figures available for the Kuomintang period were those of 1937, when there were 378 families. Then 20 families of landlords and rich peasants owned 173 hectares of the best land, leaving 80 hectares of poor, sandy soil to the 282 families of poor peasants. The landlords and rich peasants took 180 of the strongest men as their hired hands. The poor went off to become transport workers, beg, and starve. Even in a good year, not more than 0.9 ton a hectare of grain was gained. In 1939 the Communist Party cadres came in and in 1940 set up the local government, which continued until the Liberation of the whole country in 1949. By 1957, 2.55 tons of grain a hectare had been gained, which however in the Liu Shao-chi period of the early sixties fell to 2.23 tons, and some relief grain had to be taken. From 1964 to 1974, Tachai of Shansi and Shashihyu in Tsunhua county were studied. One eroded valley was filled in, and flattened, with a wide stretch of 6.7 hectares of good land resulting. Rich with autumn crops it made a magnificent sight looking over it from the well housing being built over a new well at its edges. Hard to realize that to fill in the valley with 350,000 cubic metres of soil took 82 days for 1,100 brigade folk. But they carried through the job triumphantly, and the pleasant scene we enjoyed so well is a monument to them all.

Shufu Valley

From this point we went by jeep up Shufu Valley, past terraced fields. Trees in the valley were mainly walnuts, which were bearing richly. Indeed half of the 41,000 walnut and chestnut trees of the brigade are in this valley. At its head, it fans out onto barren hill-slopes, where a few sheep are pastured. In the past, summer rains would tear down the bare hillslopes increasing in volume as they came to the valley, which they would then erode further in their mad rush downward. Now afforestation has been carried as far up the slope as possible. Pit holes have been dug on bare slopes to trap water coming down hillsides, and check dams have been built all the way down the valley to hold the flood rush. Hillsides, too, have been terraced as far up the slopes as possible, and hardy trees and bushes like haws (*sancha*) and dates (*jubjube*) have been carried on upwards where walnuts and chestnuts have left off. We also visited a part of the 548-pupils-strong nine-year school the brigade operates, which includes two upper-middle-school grades. The school here looks after chickens and rabbits, both a source of considerable revenue, 3,000 chickens and 3,500 rabbits being sold each year. Students of the middle classes of the school were out weeding crops while we were there. Theirs is an agricultural middle school, though also doing most of the courses that the schools in cities take. In addition here they go through a deeper study of Marxist classics, based on local experiences in struggle. Politics is a very live and real thing in this brigade, there being evening classes twice a week which the young people and many older ones, too, register for. The brigade averages a total of eight books per person. Some 960 people have bought the works of Mao Tsetung, and spare time drives were organized to cut and sell firewood to buy books for the 1,500 volume library. The brigade can do this, as it averages 500 trees per person. The result of all this study has been a complete re-vamping of much of the bri-

gade's land. Teams of story tellers are organized to go around homes in the evenings and tell stories of the revolution. Politics lead in the Yangshan brigade, theory being so closely dove-tailed into practice, that the raising of political consciousness goes on swiftly to material betterment. The brigade with its terraced fields and rough landscape 25 *li* long and thirteen wide, now gains over 5.25 tons a hectare each year, this year promising a further rise on that figure.

Irrigation

There is already 100 hectares of irrigated land that can stand up to spring droughts. Water is pumped up to reservoir pools on hilltops and comes down by gravity in cement- and stone-made laterals that cover the fields to be served. The soil is too porous and the grade too steep for earth canals. The plan for 40 wide-mouthed wells that will irrigate another 233 hectares is under way, ten of the wells already having been sunk, the remainder to be completed by the end of 1976. It takes a good deal of grain to sink a well. Brigade reserve funds have already given 100,000 *yuan* for the work. To dig a wide-mouthed well takes five months for eighteen workers. Water is usually reached at a depth of 40 metres. Mechanization follows.

Health

The brigade operates a well-housed clinic, and a little plant to make tinctures and pills from various medicinal herbs either grown by the clinic or collected by the farmers from the hills. Over 150 kinds of locally grown medicinal herbs are used. There is a male traditional doctor, and two barefoot doctors, who seemed to us to be very much on the job. The clinic was simple, spacious and spotlessly clean, with herbs and flowers growing outside. The two barefoot doctors nattily turned out in well-cut pink blouses are busy people, for they also have to lead all the preventive work for disease in the brigade. Birth rate has been lowered to 1.5 per cent here.

Side Occupations

The brigade has done well with its side occupations. In work rooms built of cut stone around a threshing floor, they carry out a variety of handicraft work, hemp and cotton weaving, rope making, basket and matting work, blacksmiths, leather tanning and skin curing, in all 18 jobs with 316 products.

Grain and Cash

The brigade has 145 tons in its reserve grain silos. People have saved 55 tons more which they keep in their own homes. For each year 130 *yuan* per person is paid out, and in the bank members' accounts run to 76,000 *yuan*. Five hundred new houses have been built, and this 1974, 310 new bicycles have been bought. The land has changed, and the people have changed with it. Success in changing from a single to a double crop economy has meant much.

Fuel

One of the great problems of the old Yangshan, and too of many hill brigades was the question of cooking fuel. Folk would have to rely on sorghum (kaoliang) or corn stalks, which are needed to be made into chaff for winter-stock fodder and also for adding to compost heaps. So one of the earliest improvements was in afforestation. There is a good brigade tree nursery, which 'quickly replaces trees cut down for fuel and building purposes. I was pleased to see 8,000 young walnut trees that will be ready for planting out soon. Every vacant place is used for tree growing, and now that mulberries have been introduced, a start is being made with raising silk cocoons.

Educated Youth

Amongst those who welcomed us to

the brigade were three pretty, beautifully dressed lasses. Asking who they were, we were told that they had recently come from the city as part of the 'back to the country' movement for graduated students —educated folk to the countryside. We asked what was the difference between those educated in the commune upper middle school, and those from a city one as were these girls. The answer was that they were about the same, except that the brigade-educated ones had a deeper practical knowledge. But then, the city ones brought something too . . . As they went on so would they increase their political understanding so that the brigade was really a kind of training college for them in basics. They would work with others, and then help on one or other branch of brigade work. After a year or two they might go back to higher education in the cities if the commune members thought them fit for such, or they might just settle down for the rest of their lives in the brigade, as they began to catch on. They are part of a great movement that has taken youth from the cities back to the far hinterland by the million. Most of China is still under-populated and under-developed.

Leaving Yangshan, I wrote the following lines:

Seven ridges, nine valleys
and eighteen slopes; a piece
of eroded hill country, where once
the few scraps of good land were
owned by a tiny handful, leaving
hopelessness and starvation
to the big majority; Yangshan
led by a determined Communist Party
was touched by the revolution
back in 1939, when it became
a base for the resistance; now
a place where the valleys
grow rich crops on stone faced
terraced fields, and everywhere are
trees. Yangshan where once there were
no fruit trees, but now with seventy
thousand of them, over half
of which are walnuts or chestnuts;
a place where the two thousand
three hundred and thirty-seven folk
know well the path forward, who
friend, who enemy; country folk surely
but now country folk who cannot
be easily fooled by any swift talker
schooled as they are in revolution
and keeping up with a study
of each aspect of it, as they dig
new wells, level out eroded valleys,
put in check dams, instal gravity irrigation
and raise crops that would be
the envy of many of more favoured
land. Yangshan, an inspiration
to any visitor who believes
in the power of the people to be
masters of their own destiny.

A New Visit to Wuliying in Changli

Changli county of the Tangshan prefecture is considered its poorest. It consists of many mountains, downs and a strip of land running along the sea coast liable to waterlogging or the high waves of a summer typhoon sea. Last year, 1973, it had a summer hail storm, and waterlogging. In 1974, it had a typhoon wind blow in, cutting down crop expectations, but still the county was able to gain a crop ten per cent higher than that of the previous year. Wuliying brigade in Changli is a vanguard one that has made mountain and swamp serve a new and prosperous village. Since last year's visit it had built over 800 rooms of new housing of solid stone blocks, including a new school, and which can now give its people, the whole 2,470 of them, 210 kilos a head of grain per annum and 130 *yuan* in cash. Its main source of wealth lies in its extensive vineyards that stretch out along the stony escarpment of the mountains and are irrigated by reservoirs that have been built in its mountainous hinterland valleys. In 1974 the crop amounted to 600 tons. Grapes for wine-making, for canning in the Shanhaikwan fruit cannery, and for marketing in the cities, are grown on a large scale, being supplemented by 20,000 apple and walnut trees. Swamps have been reclaimed

and turned into paddy fields, the brigade now having 133 hectares of good farmland as well as its large scale vineyards, making itself sufficient in grain, an important fact in rural development.

We drove to Changli and then on to Wuliying, from Peitaiho, passing many people going to the weekly market at Shihtze Ho (Lion River) amongst whom were folk from the Korean minority brigade of the Pohai commune we visit each summer. They waved gaily to us as we passed. Two of the women folk were riding bicycles, an unheard of thing for Korean women in the past. Long live the Anti-Confucius-Lin Piao movement! Arriving at Wuliying, we found that the brigade had a new headquarters, built of cut stone, which housed its offices, a meeting room, the clinic, and the various industrial sections for tractor repair, electricity repair, and so on. All very neat and practical, over forty rooms in all, erected at a cost of 300 *yuan* a room. The brigade has 150 draught animals, 8 tractors, and 43 motors. A new branch railway has now been run into the quarry to carry away the stone slabs which members of this commune cut so well. They support the whole mass of their vineyard vines with stone pillars which they turned to cutting in the earlier days of Liberation in order to get ready cash for building up their work. They have solved the big problem of sufficient irrigation, with their 6 kilometres of canal and 175 laterals, their reservoirs big and small in which they also grow fish, and of their housing. We visited the school which has around five hundred school children, in good, solid stone new class rooms. The boys had one of the basket-ball pitches and the girls the other, and they were playing vigorously. The rest of the school lined up each side of the road, and a very pleasant sight they made. In the future, however, numbers will drop. There have been only 20 babies born in the last twelve months, during which time there have been only nine deaths. With births down to 0.8 per cent, it is obvious that birth control measures have been taken quite seriously here.

In addition to being expert stone cutters, commune members are quick at learning other skills, twenty-seven of them being able to operate and repair tractors. They have a work strength of 1,100.

Some Changli Notes

We went from Wuliying to the Hopei Provincial Fruit Tree Research Station, whose leader gave us a round-up of its successes over the last year, and how it had spread its scientific workers in 3-1 combination all over Hopei to pass on experience gained. They have organized 12 sub-stations for promotion and research. From the responsible cadre of the county, we learnt of measures being taken to strengthen dykes along the sea coast, and of new industry that had been started since last year, a carpet factory for the export trade, a sugar factory to use the 667 hectares of locally grown beets, and then the cement and the fertilizer factories that had been built up. A plant for producing various kinds of ball bearings has been put into production. How several other communes had erected water towers like that at the Holiangshan brigade we had visited before, and how over 2,000 wells had been put down in the preceeding year. These run from 40 to 280 metres deep, and now with experience gained take about a week for a mechanized well sinking machine to drill to the required sweet-water level.

We left Changli, feeling that there was so much more which could be said on the struggle forward there, and that we had been merely looking in at the brink—yet that it was good to have come again and to catch up a little on what is being so well done. On the road back there were trucks and carts laden with fruit and grapes going to the winery and local canning factories.

China's Institute of Biophysics and Other Scientific Institutions

H. Ti Tien

Institute of Biophysics

The sky was heavy with dark clouds. Rain was predicted for the day. That was Monday, July 2, 1973 in Peking. By prior arrangements, that day and the next I was to visit the Institute of Biophysics of the Chinese Academy of Sciences, as the official representative of the Biophysical Society. The programme of my visit included three separate events: (1) in the morning of the first day, I was to meet with the staff of the Institute and to be given a tour of its facilities; (2) in the afternoon, I was to give a lecture on my specialty (bilayer lipid membranes); and (3) a seminar on biophysics in the United States and China was to be held in the morning of the second day.

Everything went according to the plan. Thanks to the efficiency and unfailing courtesy of Comrades Yang Fu-yu, Hsing Nei, and the staff of the Institute, my visit was a memorable one and has enabled me to report the following.

At about 8:30 a.m. I was met at the hotel by Comrades Yang and Hsing, and we left immediately for the Institute of Biophysics which is situated in the northwest part of Peking. On the way, we drove through many streets with tall trees, frequently several rows deep, and lining both sides of the road. Comrade Hsing, a dignified woman in her 40's, told me, in response to my query, that she had studied chemistry at Peking University and was now a political cadre doing administrative work. Presently, our car, after passing through a gate, stopped in front of a large 5-story building. I was greeted immediately at the entrance by Dr Pei Shih-chang, who is the Director of the Institute, and others. Among these, I learned later were members of the Institute's Revolutionary Committee.

In a pleasantly furnished reception room, with a portrait of Chairman Mao Tsetung and enlarged copies of his poems decorating its walls, tea was served. Director Pei introduced me to the following responsible persons at the Institute:

Chang Cheng-lien, a biophysicist specializing in receptor organs;
Hsing Nei, an administrator (woman), a graduate of Peking University;
Hsu Feng-chao, a radiation biologist who had studied in Belgium in the 1930's;
Huang Fen, a biochemist (woman);

Professor H. Ti Tien is a biophysicist at the Department of Biophysics in Michigan State University, U.S.A. He visited China last year and attended seminars and discussions at a number of Chinese universities and research institutes.

Lu I-wan, a specialist in liquid scintillation spectroscopy (woman);
Tan Man-chi, a sensory organ physiologist;
Tien Yeh, a tall man with greyish-white hair, a leading member of the Revolutionary Committee;
Tsou Chen-lu, an enzymologist who had studied biochemistry in England from 1947 to 1951, with a Ph.D. from Cambridge University;
Yang Fu-yu, a specialist in mitochondria, a graduate of Chekiang University.

After the introduction, Director Pei proceeded to outline the history and the organization of the Institute of Biophysics. First, let me make a few remarks about Dr Pei Shih-chang, before describing the Institute, based on what I saw and on information I gathered elsewhere.

A serene and soft-spoken person, Director Pei Shih-chang is over 70 years old. He appeared in excellent health and was very energetic. Dr Pei, an experimental biologist, received his Ph.D. from the University of Tübingen, Germany, in 1928. At various times, Dr Pei served as Director of the Institute of Experimental Biology, Chinese Academy of Sciences; Dean, College of Sciences, Chekiang University; board member, Department of Biology, Chinese Academy of Sciences; committee member, State Scientific and Technological Commission, State Council; deputy, Third National People's Congress; member of the Standing Committee, National People's Congress; assistant editor of *Science Bulletin* and *Scientia Sinica;* member of editorial board of *Acta Zoologica Sinica.* Further, Dr Pei also served as the head of the first multi-disciplinary scientific delegation from the People's Republic of China to the United States in November 1972. The delegation came to the US in response to invitations from the Federation of American Scientists and the Committee on Scholarly Communication with the PRC —a committee formed jointly by the US National Academy of Sciences, the American Council of Learned Societies and the Social Science Research Council.

In 1958, a number of remarkable events took place in China; among these were the launching of the Great Leap Forward, the formation of the People's Communes, and the establishment of the Institute of Biophysics under the auspices of the Chinese Academy of Sciences. (Coincidentally, that year also saw the formal founding of the Biophysical Society in the US.) The Chinese Institute of Biophysics formerly was a part of the Institute of Experimental Biology and the Institute of Physiology and Biochemistry of the Academy in Shanghai. Before 1950 the latter was known as the Institute of Medicine. In 1958, the Institute of Physiology and Biochemistry was divided into three separate units: Institute of Physiology, Institute of Biochemistry, and Institute of Biophysics, with the first two remaining in Shanghai, while the Institute of Biophysics was moved to Peking.

At present, the Institute of Biophysics does not have its own building. Its facilities are scattered in several buildings in the park-like compound housing a number of other Institutes of the Academy of Sciences. However, Director Pei said that plans are being made and the present facilities will be housed under a new roof very soon. It may be noted that, when the word 'Chinese' appears in official titles of organizations, it indicates that they are national in scope. There are three such academies. Besides the Academy of Sciences, the other two are the Chinese Academy of Medical Sciences and the Chinese Academy of Agricultural Sciences. Here a few words about the Chinese Academy of Sciences are in order.

First, before the Great Proletarian Cultural Revolution which is also known simply as the Cultural Revolution, the Academy of Sciences did, and presumably still does, receive guidance directly from the State Council. Second, the Academy of Sciences is not a purely administrative and organizational superstructure. But unlike

the US Academy of Sciences, it is comprised of five science departments (physical, life, earth, technical, and social). Under each department numerous research institutes are operated. For example, the Institute of Biophysics is under the Department of Life Sciences. There are more than 35 other institutes affiliated with the Department of Life Sciences such as the Institute of Physiology, the Institute of Plant Physiology, the Institute of Plant Research. (The afore-mentioned institutes, two of which as well as a number of science departments in the universities I also visited, will be briefly described at the end of this paper.) In the provinces and municipalities (Peking, Shanghai and Tientsin), the Academy of Sciences also operates branch academies, which were established in 1958 as a part of the Great Leap Forward. The branch academies were then charged with the task of correlating research and developments of helping to promote 'mass science.' Mass Science meant that, among other things, experienced workers and peasants were invited to serve as 'research fellows' in the secientific institutions. In agriculture, for example, a large number of experimental stations were set up in rural areas throughout the country. It was reported that ordinary peasants were encouraged to take part in scientific experiments with the guidance and cooperation of scientific workers from cities. At present, the Academy of Sciences is being reorganized; some of its institutes will be placed under the control of government industrial ministries or municipal (provincial) bureaus of science and technology.

In the Institute of Biophysics of the Academy of Sciences, there are 220 persons of whom about 150 are directly engaged in research. The overall organization of the Institute, according to Director Pei, consists of five research sections, a machine and electronics shop, and a glass-blowing shop. The two workshops I saw, located in two different buildings, appeared to be adequately equipped and comparable to those one sees at large universities in the US.

I was given a tour of a number of laboratories in the five research sections of the Institute. A description is given below.

Section on Cells and Cell Organelles

There are three groups in this section. The primary interest of the first group is on the structure and function of mitochondria, and in particular the swelling and contraction phenomena during oxidative phosphorylation. The leading person in the group is Yang Fu-yu, an articulate and alert scientist in his 40's. Yang's group, comprising eight researchers, has just completed a study on comparative volume changes of rat liver mitochondria induced by LiCl, NaCl, and KCl in the presence of EDTA. The second group is concerned with biogenesis of yeast mitochondria using certain membrane-bound enzymes isolated from snails. The ultrastructural change of the oocytes during the sex reversal of *Chirocephalus nankinensis* (a kind of crustacea) is the research area of the third group. All the laboratories I saw were neat and equipped with instruments of both foreign and Chinese manufacture. Also, I was shown a home-made polarograph whose Hg electrode was ingeniously attached to an electric hair-cutter. The vibration of the hair-cutter at 50 cps, I was told, aided uniform drop formation and gave very reproducible results. While visiting the labs, I was welcome to look around and free to take as many pictures as I wished. There were many specialized books in the labs. For example, in one lab, I saw a copy of *Current Topics in Bioenergetics* (Vol. 4). In Yang's lab, I was introduced to two scientists, Chao Yun-Jian and Hsu Sho-chang. Both were biophysics majors and graduated before the Cultural Revolution. The former (woman) was from Nankai University in

Tientsin and the latter from University of Science and Technology in Peking.

Section on Molecular Biology

This is a relatively new section formed in 1970. The section is divided into three groups. In the enzyme group, Dr Tsou is one of the prominent members. Dr Tsou and his associates are particularly interested in the mechanisms of enzyme action and the kinetics of irreversible modification of enzyme activity. The second group is investigating the structure and function of RNA at the molecular level. This group is also working on other biopolymers. The third group is concerned with the structure and organization of biocompounds. Members of the third group have collaborated with researchers in the Institute of Physics of the Academy of Sciences and Peking University. The most notable achievement of this group has been the determination of the spatial structure of crystalline pig insulin using X-ray diffraction technique at a resolution of 1.8 Å.

Section on Radiation Biology

Professor Hsu Feng-chao is the responsible person in this section. There are four groups: external radiation, internal radiation, dosimetry, and isotopic tracer methodology. Each has 4 to 6 researchers. This section operates a 30,000 curie cobalt-60 source and five small Co-60 source (8 curies each). These high energy sources are used by the external radiation group for experiments on monkeys and rats. The group is concerned with long-term radiation effects and has completed a study of 36 months duration at the height of the Cultural Revolution (1968). In this study 30 monkeys from south-western China (Yunan and Kweichow provinces) were subjected to whole-body irradiation with the dose rate at 2.5 roentgens/day. At present, they are investigating the action of ionizing radiation on rat chromosomes. The facilities I saw for these experiments were quite impressive. The internal radiation group, where I met researcher Lee Sun-pei, is concerned with the radiation effects on organs, membranes and cells using dogs and rats.

Section on Sensory Receptors

At present, there are two groups in this section; one group is working on vibratory receptors (Herbst body) of the pigeon and the other group, just started, is engaged in research on the structure and function of the retina. Besides researchers Chang Cheng-lien and Tan Man-chi, whom I have already mentioned, I chatted briefly with Cheng Guo-chang, a specialist in electrophysiology, who had studied in Switzerland in 1947 and in Mexico in the 1950's. I was also introduced to Ying Chun-yang, a graduate of Nanking University in 1964, who majored in Biophysics. Researcher Ying told me there were about 20 biophysics majors in the biology department which at the time had about 150 students.

Section on Instrumentation and Techniques

This section is responsible for the development and design of the instruments and their proper applications throughout the institute. There are two groups of which one specializes in the equipment used in radiation biology. Instrumentation other than for radiation use is the responsibility of the second group. I was shown a number of instruments such as NMR, ESR, a liquid scintillation spectrometer, an electron microscope and apparatus for fluorescence spectroscopy. Some of the researchers in this section I met, in addition to Lu I-wan, were Tao Shan-lin (Biophysics major, a graduate of Shantung University in Tsingtao), Yeh Shih-xun (graduate of the Institute of Industrial Technology in Peking) and Tsou Chia-yu (a graduate of the School

of Technology in Peking). Both Yeh and Tsou had studied radio electronics. I was introduced also to researcher Wan Lien, who is in charge of nuclear magnetic resonance instrumentation. He is a graduate of Yunan University in Kunming, and his two associates Chen Han-yun (electrical instrumentation, Institute of Technology in Shanghai) and Hsing Lu-lien, a 1959 graduate of Peking University with a major in radio electronics.

My general impression of the laboratories I saw at the Institute of Biophysics and elsewhere is that they are staffed by dedicated and hard-working scientists and technicians. One has the feeling that technology in China has reached the point that the Chinese can manufacture almost anything needed for carrying out advanced research. On the basis of technological products I saw, which included most research instruments I could think of, I am of the opinion that scientific and technological training in China must be of high calibre and very broadly based.

Afternoon, Monday, July 2, 1973

The daily working schedule in China calls for a rest period in mid-day lasting from 11:30 a.m. to 2:30 p.m., during which time the main meal of the day is eaten and many people go home to take a nap, a custom which I readily adopted while I was in China. However, I was not able to have my siesta that day because my lecture had been scheduled at 3:00 p.m. and I needed time to look over my notes. Earlier, when arrangements were being made, Yang Fu-yu said I could give my talk either in English or in Chinese with the latter definitely preferred. I therefore decided to use Chinese although I had not had opportunities to use it for more than 20 years. I told Yang that there were many technical terms I was not acquainted with. He told me not to worry and assured me that this would not be a problem for I could simply say or write the terms on the blackboard in English. Besides, Yang said, there would be scientists in the audience who would help me out, if necessary.

The sky by now had further darkened and the predicted rain was pouring. Promptly at 3:00 p.m. I was ushered into a large lecture hall and introduced to an audience of about 250. Later, I was told that, in addition to scientists and technicians of the institutes, many had come from other institutes of the Academy of Sciences and near-by universities. I spoke on the use of bilayer lipid membranes as experimental models of biological membranes. The audience was responsive and appeared to be receptive. During the lecture, I was rescued quite a few times when I came to technical terms such as exciton, spin-labelling, uncoupler, thylakoid, etc., which I did not have time to look up in Chinese. There was always more than one person in the audience who could provide readily the Chinese equivalents. In this connection, Professor Tang Pei-sung was particularly helpful. Several days later I met him again at the Institute of Plant Research of the Academy of Sciences, where a seminar on the current status of photosynthesis research was held. Professor Tang, who received his Ph.D. from Johns Hopkins University in 1930, is about 70 years old. He is very energetic and well informed on the recent advances in photosynthesis and related fields. It may be noted that familiarity with recent scientific developments (in my specialty at least) is not limited to the few specialists trained abroad. This was very evident during the question-and-answer period following my talk. Perhaps, it can be best illustrated by reproducing some of the questions asked:

> Q: Under the electron microscope the thickness of certain biological membranes appears to be the same both before and after removing more than 90 per cent of their phospholipids. How can this phenomenon be explained in terms of the bilayer lipid model in which the importance of lipids is

strongly emphasized?

Q: It is known that proteins play many essential roles in organelle membranes. For example, in mitochondrial membranes many enzymes are involved in the complex process of energy transduction. How useful is the bilayer lipid membrane, devoid of proteins, as a model for the biological membranes?

Q: It has been recently reported that Calvin and his co-workers constructed a photoelectric cell using chlorophyll and ZnO and estimated that in the near future 1000 kw power could be generated from 10 m^2 area. Technically, how does one proceed to produce this type of membrane with an area of this size?

Q: Can one arrange different lipid molecules on the opposite sides of a bilayer lipid membrane, for example, with phosphatidyl choline and sphingomyelin on one surface and with phosphatidyl ethanolamine and phosphatidyl serine on the other? The reason I ask this question is that, according to a recent paper, there is experimental evidence indicating that the plasma membrane of red blood cells may be arranged in this fashion.

One comment can be made with regard to the above. Investigators in the field of biological membranes can readily appreciate the topical nature of these questions and the Chinese scientists' awareness of very recently published journal articles.

Tuesday, July 3, 1973

In the morning of my second day at the Institute of Biophysics, the sky was still heavily overcast but rain had stopped. A rectangular-table discussion on 'biophysics' was held at about 9:00 a.m. During the first part of the discussion, lasting more than one hour, about 25 persons were present, including Dr Pei, members of the Institute's revolutionary committee, senior scientists, representatives of technicians and workers. After we were all seated, tea was served as usual. Dr Pei made a few brief introductory remarks. This was followed by my giving a short account of the Biophysical Society, its aims, purposes, organization, and its various activities both past and present. I also described briefly the current biophysical research activities in the US. I prefaced my presentation by conveying the greetings of Dr Peter H. von Hippel (our President) on behalf of the members of the Biophysical Society to biophysicist colleagues in China. The greetings were graciously received. Dr Pei Shih-chang responded by sending his best wishes on behalf of the Institute of Biophysics of the Academy of Sciences to all biophysical workers in the US.

In the ensuing two hours, the following main topics were discussed: the operation of the Institute of Biophysics, the activities of the Institute, the training of biophysicists in China, and the exchanges of information and biophysical scientists between the two countries.

The Operation of the Institute of Biophysics

In China, 'proletarian politics' are in command. I had a better understanding of this concept after Dr Pei described the operation of the Institute in response to my question concerning the Institute's revolutionary committee.

Before the Cultural Revolution, a research institute like the Institute of Biophysics had one Director who made all important decisions in consultation with the Communist Party secretary concerning the research and development of projects undertaken at the Institute. The scientific staff was divided into four categories: Researcher, Associate Researcher, Assistant Researcher, and Research Assistant. These positions were equivalent to professor, associate professor, lecturer, and assistant in a university. Persons who occupied these positions were almost all university graduates belonging to a 'privileged' class. It was basically, a hierarchical system with increasing autocratic and bureaucratic manifestations, not un-

like the system in operation before 1949. Researchers and Associate Researchers, usually section heads and group leaders, who were in the highest income bracket, frequently pursued either personal research interests or duplicated the findings of others with little originality. They did 'research for research's sake', ignoring the needs of the country. In other words, 'bourgeois' intellectuals still operated in the old way regarding knowledge as private property, theoretical work as the only work worth pursuing, or seeking personal fame and fortune, or doing things with comprador mentality (meaning trailing behind the Western science at a snail's pace).

Just before these out-moded thinking and old ways of doing things became firmly entrenched, came the explosion of the Great Proletarian Cultural Revolution. This Cultural Revolution was the most extraordinary politico-socio-economical phenomenon since the founding of the People's Republic. During the Cultural Revolution research activities at the Institute were either completely interrupted or greatly curtailed. Members of the Institute including the senior scientists spent some time in the 'May 7' cadre schools (established throughout the country in response to Chairman Mao Tsetung's directive issued on May 7, 1966), in factories, or in peoples' communes participating in manual labour. The Cultural Revolution, for science and education, meant that wider participation of the masses, implementing the policy of 'walking on two legs' (i.e., relying on one's own efforts in the simultaneous development of agriculture and industry, at both national and local levels; large and small enterprises using all available methods both modern and indigenous), carrying out the principle of uniting theory and practice to serve socialist construction, and research should be closely tied to actual production. Most important of all, the question of 'whom to serve and how to serve' was heatedly debated. The formation of the revolutionary committees at universities, factories, communes, provincial and municipal governments, were the earliest fruits of the Cultural Revolution. At the Institute of Biophysics, a revolutionary committee was also established. I was told that the Institute's revolutionary committee is made up of leading cadres, scientific and technical staff, and workers. This is known as a 'three-in-one' participation. However, there is another aspect of 'three-in-one' participation in terms of age groups in selecting the members serving on the revolutionary committee. The revolutionary committee must have representation from the old (senior scientists and workers, for example), the middle aged, and the young (recent graduates). In theory, equal representation by women on the revolutionary committee must also be observed. At the Institute of Biophysics, the percentage of women serving on the revolutionary committee is still very low (probably not more than 20 per cent).

Currently, I was told, initiation and decision of a scientific project are no longer solely in the hands of the group leader or section heads. Instead, any member in the Institute can initiate a project which must be discussed openly at each level (group, section, and institute). The supreme desicion-making body is the Institute's revolutionary committee under Party leadership. When a project is initiated and before the approval is given, a thorough literature search is conducted, both to gather source materials and to avoid duplication. Once approved, a 'three-in-one' group, formed on the principles outlined above, is set up to see that the project is properly carried out. Does it work? It is too early to pass any judgment. From the talks I had with scientists both at the Institute and elsewhere (Peking University, Wuhan University, Nankai University, Chungshan University, Institute of Physiology, etc.), my impression was that the Cultural Revolution had many profound effects. For

instance, élitism in science is no longer stressed. Many scientists feel that for the first time in their lives the idea of 'serving the people' has taken on real and concrete meaning.

Several times in the course of our conversations, Dr Pei and others reiterated that many things have not been settled yet, and they are still in a transitional period. But one thing seemed clear—that theory and practice must be combined with productive labour as the universal guiding principle of the working style. I was further told that there were three phases of the Cultural Revolution: struggle, criticism, and transformation. They are now in the last phase. The results are not yet in. But from all indications, they are confident that the outcome will be successful. At this point, our conversation moved on to a discussion of the other activities of the Institute.

Since the establishment of the Institute of Biophysics, there has been one conference on biophysics sponsored by the Chinese Society of Physiology in August 1964, held in Talien in Liaoning province, in North-eastern China. Abstracts of the conference are not available, however.

Research results of the Institutes before the Cultural Revolution were usually published in scholarly journals such as *Scientia Sinica*, *Acta Biochimica et Biophysica*, *Science Bulletin*, and *Acta Biochemica Sinica*. Publications of these journals were suspended during the Cultural Revolution. At this writing (October 1973), *Scientia Sinica* and *Science Bulletin* have already resumed publication. Dr Pei indicated that *Acta Biochemica et Biophysica* would resume publication within the year. The problem of authorship has been discussed. Should articles be signed collectively or only by the individual(s) doing the work? Apparently many scientists do not want journal publications to serve mainly as a way of enhancing their own prestige. In this connection it is interesting to note that an examination of *Scientia Sinica* (No. 1, 1973) published in February 1973 shows that one third of the articles give only the names of the laboratories.

Training of Biophysicists in China

At the outset Dr Pei indicated that he could only talk about the biophysics programme at universities before the Cultural Revolution (1966), since at the present time education and science were still in a fluid state. The enrollment of new students at many universities was resumed in 1970.

Before the Cultural Revolution, biophysics curricula were offered at the following universities: Futan University (Shanghai), Nanking University, Shantung University (Tsingtao), Peking University, Chinese University of Science and Technology (formerly at Peking, now in Hofei, Anhwei province), Medical University of China (Peking), and Shanghai University of Science and Technology. Only at Shanghai University of Science and Technology was biophysics organized as a department. In all others, biophysics was offered as a specialty in the departments of biology. In either case, the training required was four years. In general, the curriculum required, in addition to basic courses (chemistry, physics, biology and mathematics), three specialized courses. These were radiation biology, general biophysics, and cell biology. In general biophysics, among the topics covered, were thermodynamics, mechanics and bioenergetics. In cell biology, the structure and function of biological membranes were studied. At the end of four years of study, the student had to pass a final examination (written). No formal degree was awarded, however. My impression was that the training which the student received would be equivalent to that of a M.S. student in the US.

Things certainly will not be the same after the Cultural Revolution and what

I have described above may be of historical interest only. There are many reforms and innovations introduced. Most salient are the standards and methods of selecting students being admitted to the universities. Briefly, in addition to the usual moral, intellectual and physical qualifications, the students are selected on the basis of the following two categories: (1) high school graduates at least 20 years old plus a minimum of two years of practical experience in factory, commune, or the People's Liberation Army, and (2) in the case of workers, poor and lower-middle peasants and revolutionary cadres who have more than eight years of working experience or who have inventions or innovations to their credit. Methods of selection are: self-application, recommendation by one's peers, approval by the leadership, and an entrance examination (non-competitive) set by the university concerned. The purpose of the examination, I was told, is to ascertain whether the student has achieved a level of education at least the equivalent of a junior middle school graduate.

As of autumn 1973, about 353,000 students have enrolled in the institutes of higher learning. Presumably they have all been selected on the basis of the principles outlined above.

How will this new approach in education affect the training programme in biophysics? It is hard to answer, but it is of interest to note that implicit in the 'struggle, criticism, and transformation' of the Cultural Revolution, trial by experience and modification when necessary are the working rules.

Scientific Exchanges

Since the establishment of the People's Republic in 1949, there had been almost no contacts between US and Chinese scientists until about two years ago. Up to March of 1972, fewer than 10 scientists from the US had visited China. That, it should be noted, is about the same as the number of Americans who had been to the moon. Thus, towards the end of our discussion I raised the question of future scientific contacts and exchanges between US and Chinese biophysicists.

As a positive step in this direction, I mentioned the possibility of their sending a few representatives to our next annual meeting in Minneapolis in June 1974. Also I said that the Biophysical Society is interested in journal exchanges. Dr Pei said that the Institute would be pleased to accept the Biophysical Journal and other publications of the Society. In return, they would send reprints of their work after journal publications have been resumed. On the two other issues, Dr Pei expressed the view that he saw no difficulty once the process of normalizing relations between China and the US has been completed. It is interesting to note here that, back in 1964 when a scientific group from the Royal Society (London) visited China, the Academy of Sciences indicated that biophysics was one of the three fields of most immediate interest for Chinese scientists, the other two being geology and meteorology (high energy physics, molecular biology, and cardiovascular surgery were second in priority). Although this list was drawn up before the Cultural Revolution, it remains to be seen whether the Academy of Sciences has changed its priorities.

Institute of Plant Research (Peking)

In addition to the Institute of Biophysics, I also visited a number of other institutes of the Chinese Academy of Sciences as well as science departments in the universities. These included the Institute of Plant Research in Peking, the Institute of Physiology and the Institute of Plant Physiology, both in Shanghai, Chungshan University in Kwangchow, Kwangtung province, Wuhan University and Central China Normal University, both in Wuhan, Hupeh province, and Peking University. Since the

available facts on biophysical research and science education are still very few, a brief description of these centers of research and of higher learning may be informative and provide additional glimpses of scientific activities in China since the Cultural Revolution.

The Institute of Plant Research is located near the Peking Zoo, on the outskirts of the city. I spent the entire day at the Institute on July 6, 1973, there talking with its staff and touring its facilities. The Institute was established in 1953 with Professors Lin Jung and Tang Pei-sung as its deputy directors. The past accomplishments of the Institute include the discovery of a plant containing a high percentage of corticoid hormones, the collection of many species of wild herbs, and the demonstration of a plant growth regulating drug called Tao-Mai-Li which produced effects on wheat such as an increase in output, a shorter and stouter stem.

At present, like all other organizations, the Institute is run by a revolutionary committee. Upon my arrival at the Institute, I was met by Professor Lin Jung, Professor Tsui Cheng, and Hsiao Shun, a responsible person of the revolutionary committee. Professor Lin, who is about seventy and received his Sc. D. from the University of Paris in 1930, told me that the Institute has 350 workers, including 250 technical personnel; the majority of them are university graduates. There are five scientific sections: taxonomy, ecology, paleobotany, morphology and cytology, and plant physiology. I was given a quick tour of the Institute's laboratories located in several buildings scattered in a well-tended garden-like compound. The taxonomy section has a large herbarium with more than one million specimens. The collection was actually started long before Liberation (i.e., before 1949). Tang Yen-chen, the section head, told me that there are 60 persons in his group which is engaged in the preparation of a major publication entitled *Icongraphia Cormophytorium Sinicorum* with the first section comprising some 10 volumes. I was shown the first two volumes which had already been published in 1972 and 1973, and Volume 3 is in the press. This mammoth undertaking with the first two volumes already totaling 2,469 pages will eventually have detailed drawings for each of the 30,000 entries of Chinese plants. The volumes I saw have indexes and headings in both Chinese and Latin. The taxonomy section was also doing a number of other experimental investigations. Wu Chen-shun, leader of the plant chemistry group and a graduate of Tungchi University in Shanghai, showed me an experiment in progress. They were extracting an ingredient from *Ledum palustre* which was said to be useful in treating asthma and other respiratory diseases. In the section on paleobotany, I talked with Hsu Jen and Chang Hsing-tan. The latter specialized in higher plants and was a graduate of Amoy University in Hsiamen, Fukien province in the early 1950's. Comrade Hsu, the section head, showed me some plant fossils from the Devonian period in Yunnan province, which were used in identifying the stratigraphic sequence. The section on plant physiology, the largest unit of the Institute, has over 80 technical workers and consists of four groups: photosynthesis, growth hormones, herbicides, and produce and fruit storage. In one of the laboratories, I was shown an electron microscope made by Peking Scientific Instruments Factory in 1969. I was told by Dr Tuan Hsu-chuan that the Institute acquired the instrument only recently. The electron microscope is capable of 30,000 X magnification with a resolution of 12 Å. Dr Tuan, who served as group leader, received a Ph.D. from Stanford University in 1927 and afterwards worked for a number of years at the University of Pennsylvania. The three individuals I met who were working on the electron microscope were Tso Shih-yu (Szechwan University, Chengtu), Hsia Chun-lun

(Chungshan University, Kwangchow), and Chao King (Technical Cadre School, Peking). They all had about ten or more years of experience. The electron microscope unit worked closely with the photosynthesis group.

The leader of the growth hormones group is Shao Li-mei. She specialized in botany and graduated from Nanking University in 1953. This group had extracted a growth hormone from water chestnuts which, unlike the well known gibberellin, stimulates the growth of callus tissue cultures and generates buds in such cultures. In charge of the produce and fruit storage group is a woman named Chang King-lan who graduated from North-western Agricultural College, Wukung, Shensi province, with more than 20 years of experience. This group had found conditions conducive for storage of tomatoes and other produce, namely at low oxygen concentration (2-4 per cent) and/or at high CO_2 concentration (6-8 per cent) but harmful when the CO_2 concentration is greater than 20 per cent. I was told that polyphenol oxidases may be involved. The herbicide group, under the leadership of Lee Quo-feng (Szechwan University, 1956) had done extensive work on the use of DCPA (3,4 dichlorobenzene-propionamide) in rice fields. This compound was said to be very beneficial to poor and lower-middle peasants. In the photosynthesis laboratory I again met Professor Tang Pei-sung, who attended my lecture at the Institute of Biophysics as mentioned earlier. The laboratory is directed by Kwang Ting-yun, a woman scientist who had done post-graduate work at Moscow State University in the Soviet Union. This very articulate scientist told me that there are 26 researchers working on a wide range of both experimental and theoretical problems such as photophosphorylation, oxygen evolution, isolation of reaction centre of photosystem II, and the ultrastructure of chloroplasts. In addition, the group works in close collaboration with a local factory in producing ATP for drug uses. (I was told that ATP is effective in the treatment of certain liver diseases and ear-ringing.) The laboratories I saw were equipped with assorted instruments including an ESR spectrometer made in Tientsin during the Cultural Revolution. I was introduced to a woman scientist named Chou Pei-jen, specializing in photophosphorylation, and Shih Ting-chi, a graduate of Peking University in charge of the ESR instrument. After a delicious lunch with Professor Lin Jung, Professor Tsui Cheng and Comrade Hsiao at Peking Exhibition Centre near the Institute of Plant Research, I was taken by Professor Tsui to see some laboratories belonging to the morphology and cytology section. Incidentally, Professor Tsui received a Ph. D. from the University of Michigan in 1947 and did his dissertation on the role of zinc in auxin synthesis in the tomato plant. He was secretary-general of the Chinese Society of Plant Physiology. The morphology and cytology section, begun in 1971, has about 20 researchers. I was introduced to Chien Ying-ching (Futan University, 1954), Ko Chung-shun (Amoy University), and Chien Nan-feng (Futan University, 1949). I was given a reprint of a paper on cell differentiation of embryos in the pollen grains of *Triticale* and *Capsicum annuum* by Chien Nan-feng and co-workers, which appeared in the first issue of *Scientia Sinica* (1973) since the Cultural Revolution.

Institute of Physiology (Shanghai)

As mentioned earlier, the Institute of Physiology was established as a separate unit in 1958. Before the Cultural Revolution, the Institute, under the direction of Dr Feng Te-pei, had a wide range of research activities in areas of basic physiology of the central nervous system, human electroretinogram, tissue cultures of adult human brain cells, analysis of single unit activity in the lateral geniculate body of the cat, and the influence of drugs on gastric pepsin secretion in pigs, and bio-

chemistry of tropomysoins of proteins of connective tissue and of various enzyme systems. The Institute's biological electronics laboratory, in cooperation with Twilight Radio Equipment Plant in Kwangchow had made trial production of a highly sensitive electrometer useful in biological research. I visited the Institute on August 17, 1973 and was received by Dr Feng, a very friendly person with greying hair who received a M.S. from the University of Chicago in 1929 and a Ph.D. from the University of London, England in 1933. Dr Feng told me that the Institute now consists of 5 sections: (1) general physiology of the CNS and neuromuscular system, including systems analysis physiology; (2) acupuncture anaesthesia; (3) sensory organs—visual and auditory; (4) physiology at high altitude; and (5) reproductive physiology including birth control. The Institute has 290 workers of whom 160 are research scientists. Later, I met some of them during a brief tour. Among these were Fan Shih-pan (Chiaotung University, 1950, muscle contraction), Wen Yeh-Shao (Futan University, 1963, muscle contraction), Sun I-an (Peking University, 1950, electrophysiology), Mu Wang-yuan (Honan University, 1951, electrophysiology), Chou Tai-sen (Shanghai University of Science and Technology, 1963, physiology), and Chu Pei-hung (Chinese University of Science and Technology, 1965, physiology). In response to my question concerning the impact of the Cultural Revolution, Dr Feng said that there had been fundamental changes both in the style of work and attitude, confirming what I had learned at the Institute of Biophysics. In addition, Dr Feng said that the Cultural Revolution is not an 'all-or-none phenomenon' but a continuing process of 'struggle-criticism-transformation' and will require years, if not decades, for completion. He made this statement as a matter of fact and full of optimism. I detected no trace of cynicism either in his voice or expression. On the contrary, I felt that he meant every word of what he said.

Institute of Plant Physiology (Shanghai)

The Institute of Plant Physiology of the Chinese Academy of Sciences began in 1950 as a plant physiology laboratory of the Institute of Experimental Biology and became a separate unit in 1954 with Lo Tsung-lo and Ying Hung-chang as director and deputy director, respectively. Before the Cultural Revolution, the Institute had engaged in a wide range of investigations including research on the physiology and biochemistry of micro-organisms (such as actinomycetes and actinophage); effects of gibberellin on vegetable crops; ecology of wheat; resistance of agricultural plants to salinity, flooding, and drought; biosynthesis of starch in rice; antibiotics; biosynthesis of riboflavin; photosynthesis, particularly in relation to the life conditions of agricultural plants; and functions of micro-organisms in the rhizosphere of cultivated plants. At the time of my visit (August 17, 1973), the Institute was being moved to a new building. I was not able to see its facilities but I did talk with Dr Ying Hung-chang and his colleagues at the Institute of Physiology during my visit with Dr Feng Te-pei described in the preceding section.

The Institute of Plant Physiology now has six research sections: (1) photosynthesis, (2) nitrogen fixation, (3) plant hormones, (4) agricultural microbiology, (5) tissue culture, and (6) enzymes. According to Dr Ying (Ph.D., California Institute of Technology, 1937), the Institute has about 350 workers, with the overwhelming majority having received their training after Liberation. Because of my interest, our conversation was centred mainly on photosynthesis. Dr Ying said that they are now working on more practical problems closely related to agriculture. For example, workers in the hormone section are studying the effect of gibberellins and other new microbiologi-

cal products on plant growth. Dr Ying said that they are also working on such problems as photophosphorylation, oxygen evolution, effects of uncouplers, and quantum requirement and the intermediate steps of photophosphorylation. It is worth noting that, according to Jagendorf of Cornell University, an authority on photosynthesis, a group of researchers of this Institute had independently and simultaneously discovered in 1962 that, in isolated spinach chloroplasts, ATP can be formed after illumination under certain conditions.

The most interesting aspect of my visit was a discussion held later with four representatives of the younger generation of scientific workers together with Dr Ying Hung-chang and Dr Feng Te-pei participating. The four representatives, who all came from the Institute of Plant Physiology, were Ma Mun-ren (a graduate of Nankai University), Lee You-tse (a graduate of Szechwan University), Shen Yun-kang (a graduate of Chekiang University who participated in the photophosphorylation work mentioned above), and Wei Chia-mian (a graduate of Nanking University). They all had more than 10 years of working experience as researchers and were in their middle 30's. In the course of our conversation I asked them what difference they experienced, if any, before and after the Cultural Revolution. Rather than giving their individual responses, I have put together a composite of their views.

Most important of all, they all agreed that a tremendous upsurge has taken place in the Institute and in themselves as a result of the Cultural Revolution. The Institute is now governed by a 'three-in-one' group (revolutionary committee) selected on the principles described earlier. In themselves, these scientists felt that they have acquired a new world outlook of serving the people. In the past they say that the old world outlook of intellectuals often found expression in their professional work, most notably in separating theoretical knowledge from practical work and/or separating politics (political consciousness) from professional endeavor. They argue that, if one accepts Chairman Mao's dialectics that 'the correctness or incorrectness of the ideological and political line' is the deciding factor in everything, then clearly one must be involved politically. Lee You-tse was particularly articulate on the problem of how to integrate with the masses. How could one share the feelings of the working class if one is not involved with them, say, in a factory?

What this younger generation of scientists said was very revealing. There must have been a heated debate and struggle during the years of the Cultural Revolution. A little pamphlet entitled *Strive to Build a Socialist University of Science and Engineering* (Foreign Languages Press, Peking, 1972), which I picked up in a bookstore in Nanking echoes much of what they said to me. The booklet also contains a summary of the Forum on the Revolution in Education in Shanghai Colleges of Science and Engineering held on June 2, 1970. Among the many problems involved in transforming education, the Forum singles out that it is the teachers who are the main problem.

Chungshan University (Kwangchow)

I visited two science departments of Chungshan University in Kwangchow on June 13, 1973. Formerly known as Canton University in 1924, and at one time a part of Lingnan University, the name was changed to Chungshan (another name of Dr Sun Yat-sen) University in honour of Dr Sun after his death in 1926. Before the Cultural Revolution, the University's science departments included biology, botany, chemistry, geography, geology, mathematics, mathematical mechanics, oceanography, physics, zoology and a semi-conductor laboratory. In 1964, the University had 4,000 stu-

dents. The University was closed during the Cultural Revolution. Both staff and students went to the countryside and factories to receive re-education from peasants and workers. The University had since re-opened in 1970 and admitted 540 new students in 1970, none in 1971, and 780 students in 1972. About 25 per cent of these students were women. The total administrative personnel, teaching staff and workers was 2,000. Of these, 1,000 were faculty. Now the University has 11 departments (Chinese, history, philosophy, economics, foreign languages, biology, chemistry, physics [electronics], metallurgy, mechanics, dynamics). There is also a school (department) of library science. I was told the above by Hsu Mo-ching, a responsible person of the 28-member revolutionary committee. Comrade Hsu stressed a couple of times that they are still in an experimental stage in organizing the University. The two science departments I saw were biology and chemistry. I was guided on my visit in the biology department by Huang I-ming, who studied for three-and-a-half years in Leningrad, Chen Shun-hwa, a woman chemist who graduated from Chungshan University, Tso Hsiug-sen, a woman who had taught inorganic chemistry for more than 20 years, and Wong Eng-xian, a member of the Biology Department. In the insect ecology laboratory, Liu Fu-sen told me that they were working on a problem of controlling the *litchi* wasp with insect parasites and testing them at near-by communes. In the physiology laboratory, I met Liu Hseuh-kao, who had studied at New York University in the early 1950's, and his two associates, Yang Sze-kiang and Hsu Shih-po. While I was there, they were doing an acupuncture anaesthesia experiment on a rat. Researcher Liu said that they hope to understand the underlying physiological mechanism for the manner in which acupuncture works. In the Chemistry department, I was shown the high polymer laboratory where Professor Lee Man-fu was in charge. The laboratory was well equipped with both Chinese and foreign-made instruments. Professor Lee told me that there were 40 students admitted in 1970 since the Cultural Revolution and they were expecting to enroll about 60 students in the autumn of 1973. The duration of training was tentatively set for three years.

Wuhan University (Wuhan)

In the tri-cities of Wuhan, often called the Chicago of China, in Hupeh province, I visited two universities: Wuhan and Central China Normal. First a brief description of my visit to Wuhan University will be given.

The University was established in 1913. Before the Cultural Revolution, science departments included biology, chemistry, mathematics and physics. Present at the reception during my visit were Chen You-ching (responsible member of the University's revolutionary committee), Professor Sun Chiang-shung (studied at University of Edinburgh, Scotland in the late 1930's), Professor Wu Yu-ching (head of History Department, Ph.D. Harvard, 1947) and two students from the Foreign Languages Department. There were 5,000 students and 2,000 in faculty before the Cultural Revolution and now 2,000 students with the same number of faculty (June 1973). Besides the traditional science departments mentioned above, there are four factories attached to the University for students to gain practical experience. I was only able to see two laboratories in the Biology Department. In one laboratory, I met Liu Lien-tsui, a graduate of Wuhan University in 1936. She told me that she has isolated particles of 300-500Å and 1000-1200Å from breast cancer cells and is interested in their origin. In the second laboratory, Researchers Cheng Chen-quo (Wuhan University, 1960) and Ho Hai-ping (Wuhan

University, 1947) have been doing experiments on liquid crystals and their application to cancer diagnosis. Though I was totally ignorant of the field and did not understand what they were saying, I was nevertheless impressed by a number of coloured photographs of cancerous cells to which certain liquid crystals had apparently lent their service.

Central China Normal University (Wuhan)

This University, which I visited on June 18, 1973, is the largest in Central China in training secondary school teachers. In particular, I talked with Lee Chung-cha, head of the Biology Department (Ph.D., Cornell University, 1938) and Ning Yuan-mo, head of the Chemistry Department. Professor Ning gave me a tour of the chemistry building. The Biology Department started re-admitting students in 1971 and had 125 students and 69 faculty, including 10 assistants during the time of my visit. Formal instruction has been reduced from 4 to 3 years and the students spent 50 per cent of their time in self-study. The students spent two days per month in physical labour either on a farm or in a factory. The Chemistry Department is a bit larger with 190 students and about 70 professors (distribution: inorganic 20, organic 20, analytical 10, physical 10, and chemical engineering 10). Besides the usual chemistry courses, the student has to take one year of physics, mathematics through differential equations, competency in one foreign language (usually English), political science, and physical education. Before the Cultural Revolution, a course in educational methodology was required. At present the course has not been re-introduced pending further discussion, Professor Ning said. In addition, the student spent two days a month working on a commune. One interesting feature about the department was that the students and chemistry faculty operate a small factory making reagent grade ferric chloride as a part of laboratory work. The two principal starting materials for the process were iron and chlorine gas. The latter was obtained by electrolyzing the brine. The source of iron was discarded iron turnings from near-by factories. The use of 'waste' products was stressed. I was shown cartons of finished products ready for shipment.

Peking University

Of all universities in China, Peking University stands out not only for its academic excellence but also for its revolutionary tradition dating back to the famous May 4th student movement in 1919 in which Mao Tsetung participated. Forty-seven years later the students of Peking University started another movement, which has become known as the Great Proletarian Cultural Revolution. Its impacts are still being felt today on all aspects of Chinese life. I visited Peking University on two separate occasions and saw the colloid science laboratory in the chemistry department and a biophysics laboratory in the Biology Department. Professor Fu Ying, head of the colloid science laboratory with a Ph.D. from the University of Michigan in 1928 and a vice-president of Peking University before the Cultural Revolution, together with his assistant, Chao Quo-she (a graduate of Tsinghua University in 1949) escorted me around the laboratory. Professor Fu told me that they are now working on problems with a practical application such as understanding the mechanism of wax deposit in oil pipes and devising means for the prevention of its occurrence. The laboratory was equipped with a new IR spectrometer and other standard instruments. I met many researchers in the laboratory who were former students of Professor Fu. Two days later after my visit, a seminar was held in the hotel's reception

room where I was staying, with 18 scientists from the colloid science laboratory. We talked about the state of colloid science in the US and China. All the scientists who came to the seminar, except one, were graduates of leading universities in China. The exception was Lee Yu-feng. She had only a junior high school education and was sent to Peking University by the famed Taching Oil Works in North-east China, where she worked as a technician. Before touring the biophysics laboratory of the Biology Department, I had brief conversations with two departmental representatives: Wu Hsiang-yu, a graduate of Catholic University in Peking in 1947 and Mei Cheng-an, a former graduate student of the late Dr R. Emerson. Mei Cheng-an studied at the University of Illinois from 1947 to 1956. In the biophysics laboratory I was introduced to Chou Pei-ai, who majored in biophysics and was a graduate of Peking University. Researcher Chou told me that the biophysics laboratory has a staff of ten and is divided into two groups. The first group concentrates its effort on instrumentation and the second on acupuncture anaesthesia. They work closely with the City Health Department of Peking and Peking Medical College. I was told, for example, they help to train technical cadres in the use of small computers specially designed for medical applications. I saw a few people working on a variety of electronic instruments and was shown a large Faraday chamber capable of accommodating a patient lying down. The chamber had all sorts of instruments attached to it including an apparatus for measuring blood flow in the brain.

Concluding Remarks

The descriptions above are based on my two-and-a-half months' visit to the People's Republic of China in June, July and August of 1973 and my reading on the country in preparation for the trip. There are over 1,600 research, development and higher education institutions in China, of which some 170 research institute are under the supervision of the Academy of Sciences. The number of institutions I visited is less than 1 per cent. Therefore, I did not conduct a survey of the field and most certainly am not qualified to be an expert on any part of Chinese science. In this article, I have attempted to give my observations, impressions and interpretations. In concluding this report, I would like to offer some of my impressions of the country that I left more than a quarter of a century ago.

During the ten-week sojourn in China, accompanied by my wife and two daughters, I visited 21 cities and towns in 14 provinces and municipalities, covering some 6,000 miles. My impressions and views of the people and the country can be summarized as follows:

(1) The people we came in contact with were business-like, friendly, helpful, dignified, and curious. I can also add a number of other adjectives such as polite, honest, and non-obsequious. Most important of all, I noticed that the age-old concern of 'face' appeared to have gone out of style, especially among the intellectuals.

(2) The streets in the cities and towns were crowded but clean and orderly. Although most of the streets were quite dark at night owing to a shortage of electricity, they were safe and we walked in them without fear, as did many Chinese. There was no evidence of crime or theft.

(3) Everywhere we went, we saw portraits of Chairman Mao Tsetung, his sayings, and the reproductions of his poems. It is my personal feeling that it would be difficult to understand China today without first of all having some understanding of the thought of Mao Tsetung, which seems to articulate with great force the spirit of the new China.

Throughout my visit at the Institute of Biophysics and elsewhere, I was cor-

dially received. It is my feeling, and that of many others as well, that the re-establishment of scientific contacts will be of mutual benefit to the US and China. To conclude this section, I would like to quote the words of Dr Pei Shih-chang, at the conclusion of his visit as the head of the first Scientists' Delegation from the People's Republic of China to the US in November 1972, 'With the common efforts of the two peoples, the new seeds of friendship which have been sown between them are sure to grow well and bear rich fruit.'

'None So Deaf'

Helen Rosen

In Talien, Liaoning province of North-east China, it is still dark at 7:30 in the morning. The lamp-posts with their big, round globes cast a faint light on the myriad bicycles hurrying by. At the shadowy bus-stop on the corner of the Central Square, in front of the Hotel, crowds of people get off the bus and disperse in many directions, going to work.

A queue of people, in long padded coats, and woolie scarves or fur hats, warmly dressed as snowflakes fall, wait to board the bus. Li Chen-hua, fourteen, snugly dressed in pants and padded jacket, with a bright red scarf over long black braids, also boards the bus. The crowd is thick and there is much good-natured jostling. The air is steamy and the windows coated with melting ice. Li Chen-hua stands at the back of the bus and solemnly rings a loud bell she holds in her mittened hand. People turn to look —and to listen! In a loud, but strange voice the girl says: 'Be careful getting on and off the bus—watch out for bicycles and trucks—this is Transport Safety Week.' The passengers smile and applaud her. Some move to shake her hand.

She is a profoundly deaf girl, a student at the Talien School for the Deaf. The excellent auditory training has helped her to enunciate the 'slogan' just about well enough for the people to understand. Before Chen-hua had enough confidence to perform this task, she had been through years of struggle to learn speech. But she was not alone in that effort. Her mother and father took turns, depending on their work hours, attending sessions at the school where they watched the teachers teaching their child. At home, the parents taught other members of the family so that, when Chen-hua came home from school, domestic chores were required of her and someone was always teaching her either to pronounce a known word better, or enlarging her vocabulary by introducing her to a new one. When sent to a neighbour, with a message requiring an answer, she would meet another friendly teacher. At the school she was encouraged to write essays and to read them aloud. The content would be criticized, but also the speech. This gave her courage to meet more easily with 'hearing' people and discouraged the use of 'signs'. Plays, orchestral concerts, ballet, Chinese legends and modern Peking opera were in constant rehearsal. Often performances were given for the workers in the near-by embroidery factory.

Huang Shih-jen is twenty-one. He has graduated from secondary school and is now a worker at the Pearl Shell Factory. He came to the School for the Deaf one morning when we were visiting there to tell us his story. His gutteral speech was typical of the profoundly deaf. But our interpreter was able to understand him well enough to translate his story to us.

Shih-jen was a stocky young man who spoke slowly and with emphasis. He told how he had gone to a normal school after a few years of special training at the School for the Deaf. He had been assigned a seat next to a student who was to be his mentor. This friend had come along with him and was nodding his head approvingly as the story unfolded. He told how he had been encouraged by the teachers and the other students to repeat lessons word for word, not only for better understanding, but for improving his speech. He was determined to speak better so he listened to whatever he could hear on the radio and would repeat what he had heard. He read many stories and recited them to his friends. At eighteen, he had gone to work in the factory. His co-workers took on the responsibility of teaching him the new vocabulary of machinery. He learned the names of the lathe, the drill, the different processes for refining the rough sea shells into luminous, pearly paintings. His friends insisted that he join the political study group, that he undertake reading on subjects under discussion and then report on them verbally. He goes with his factory companions to the country-side to do manual labour and has learned to drive a truck. He can now work independently and his friends are proud of his progress. He, himself, feels that he is a participating member of society. He ended his talk to us by singing in a monotonous but recognizable tone *The East Is Red*.

This web of responsibility to the handicapped extends from the special school and the teachers, to the parents, to the neighbours, to the community and to the city, itself, so that a deaf child does not feel 'apart' or 'different' or 'inferior', but is strongly motivated, helped to overcome his handicap and to share with his hearing friends in the building of China.

'For a thousand years the iron-tree has had no blossom, but I, a deaf-mute child, have learned to sing!'

DPRK — The Phoenix Country

Myra Roper

It looks as if it were centuries old, the elaborately constructed, gaily painted, ivy-covered, wood and stone gateway, in the centre of Pyongyang. So does the great gate in the city square of Kaesong, down near the 38th Parallel. Actually, neither has yet come of age; nor have the modern buildings around them, even the trees are not yet twenty-one years old.

Both gates have been meticulously reconstructed from plans and sketches to replace the originals destroyed, along with most other memorials to Korea's ancient culture, during the three years of the Korean War—along with several million human beings.

> *Almost the entire Korean Peninsula is just a terrible mess. Everything is destroyed. There is nothing left standing worthy of the name. There are no more targets in Korea.*

So reported Emmett MacDonell, Head of Bomber Command, to the US Congress in 1953.

So, as one of the few Australian visitors to DPRK (the Democratic People's Republic of Korea) I was seeing a country started from scratch, a sobering yet exhilarating experience. Along with the débris the people have swept away their old feudal society and the remnants of nearly four decades of Japanese occupation and exploitation.

A small country surrounded by giants Korea has never had much chance to be its own man—'always invaded, never invading,' I was told. Its encounter with UN (US) forces in the early fifties was only the latest and most devastating in its long history. Russian Czars, Japanese and Chinese Emperors had sought hegemony or downright possession. Today, says Harrison Salisbury of the New York Times, DPRK's economy ranks third in Asia after Japan and China. And it is mostly Korean brains and tenacity that have done it. The growth of material output is briefly outlined as:—

1946	100
1949	337
1953	216
1971	7,062

In the early difficult days DPRK's two socialist neighbours USSR and China gave generous aid in cash and expertise, but in the last decade DPRK has been self-sufficient. It has no foreign capital investment, no foreign debt. Today's production is increasingly diversified.

But in the fifties and early sixties, faced with housing, feeding and clothing some 14 million people, Kim Il Sung's Government had to give priority to town and country planning on, literally, a nation-wide scale. And the Government has made a remarkably good job of it; one accepts the achievement because, like Everest, it is there.

The capital, Pyongyang, has wide

streets and wider boulevards (and so, I found, have Kaesong and Hamhung). One is told that a quarter of the city is green and believes it! No street I walked along was out of sight of grass or trees. There are hundreds of high-rise flats; also, to vary the pattern, 2- or 3-storey-blocks and some attractive use of coloured brick and varied roof-styles: there are factories large and small. Kim Il Sung University accommodates some 15,000 students (its building No. One is 15 storeys high). The National Theatre is built in traditional style and the famous Children's Palace, with its 500 rooms, provides education and recreation for some 1,000-1,200 children after school each day. Schools, clinics and shops are within easy reach of homes and public transport—mostly trolley-buses—is frequent and cheap.

In the countryside villagers live mostly in tidy little single-storeyed cottages, their tiled roofs designed with the graceful Korean-style upcurving roofs.

The winged horse, *Chollima*, Korea's Pegasus, is the national symbol; like it the economy must make flying leaps forward.

Industrially the North is better off than the South; though smaller it has more natural resources, including one of the world's largest deposits of magnesium clinker, good reserves of coal, bauxite and non-ferrous metals. Once the country's basic needs were met, great efforts—and sacrifices—were made to develop heavy industry—mining, steel-making, machine-building.

Steel production, for example, was 2.2 million tons in 1970. By 1976 at the end of the Six-Year Plan it is expected to reach 3.8-4 million tons and electricity will grow from 16,000 million kw to nearly 30,000 in the same six years.

But, even so, it was Workers' Party policy to see that at the same time the people's standard of living rose, steadily if not spectacularly, so that light and medium industries were started to meet modest consumer demands.

Today in the big Exhibition Hall in Pyongyang one sees not only industrial and agricultural machinery, mining equipment, trains and buses, but also a wide variety of household goods and simple personal requirements, sewing machines, radios, wristlet watches and a special Korean-model electric rice-cooker. 'Every home should have one,' says President Kim Il Sung. They cost about US$7.5.

Like all Asian countries Korea had a predominantly agricultural economy. As late as 1956 agriculture provided some 75 per cent of national income and industry 23 per cent; today the figures are just about reversed. Even so the Government aims to grow as much food as possible and slogans everywhere drive home the need to 'Remove the two differences—between agriculture and industry, between town and country living'; 'Encourage the Three Processes—Irrigation, Mechanisation, Chemicalisation.'

Irrigation they claim is complete, no more drought or flood thanks to 40,000 kilometres of channels and over 11,000 pumping stations.

Mechanisation is not yet complete, but moving well enough. The aim is some 7 tractors per hundred hectares instead of the present 1.46, a tenfold increase on the 1958 figure.

Chemical fertiliser output must, they say, reach at least 2.8 million tons by 1976 instead of the present 1.5 million tons.

In return for the peasants' hard labour, their villages will have schools, clinics, entertainment, libraries, as far as possible the equal of those in cities; good public transport will end isolation of the remoter villages. Not for the DPRK the dichotomy of city slicker and country bumpkin!

'The Child is King'—'Young people are the flower buds of our country and its future rulers'; these are two of Kim Il Sung's most quoted sayings and certainly the community is more child-centred than

any I have met. A very large proportion of national budget and national interest are devoted to education and were the children not so well-disciplined and so 'community-trained' they would be unconscionably spoiled by this attention. Education is free, compulsory—and highly politicised. Last year the Government introduced its 10-year, plus one-year preschool, system and this, they hope, will be universal within a few years. Technical education is stressed both in full-time colleges and in part-time and correspondence courses, in factories, mines and cooperative farms.

As befits a Marxist-Leninist state, manual labour must be respected and intellectual élitism eschewed; so schools, universities, farms and factories are linked in a dozen ways; parents, peasants and workers are to be regarded as very much part of the educational process. When we visited Kim Il Sung University not a student was to be seen—they were all off for 25 days in the country taking part in the all-important rice transplanting. Many of the staff were on the job too.

I found women's education and job opportunities much stressed. Kim, like Mao, is a feminist and, indeed, he has reason to be, for during the long anti-Japanese struggle the help of the Women's Corps was crucial, and during the last war they ran much of the country when the men were at the front. Twenty-five per cent of the Supreme People's Assembly and 75 per cent of the doctors are women.

In North Korea, as in China, one finds it hard to compare the standard of living with ours. The whole approach to the good life moves on a different track. Wages seem low to us Westerners, but the average 90-100 won per month ($66-75) is more than adequate when rents take only 1 per cent of income, when education is free, medical services very cheap and food prices held steady, and the no-car economy is incalculably less expensive for both the public and private purse, no garages and ring roads to be built, no casualty wards, no diversion of technical skills to the automobiles demands.

The Kims don't need to keep up with the Lis as wage differentials are small, the highest being about three times the lowest. Administrators and engineers told us that especially skilled workers could earn as much as, or more, than they on the piece-work system.

It is necessary to remember this when comparing GNP figures of one Asian country and another, especially North and South Korea. Professor Hans Singer in *The Outlook for the Poor World* (Internationalist, July 1973) writes that some seeming achievements are 'more the result of statistical delusion than reality—progress with countries has been weighted in favour of the rich—and income distribution has become more unequal. The sham objective of a growth in overall GNP has been satisfied while the real objective of a reduction in poverty has not.'

In DPRK the whole national ethos is opposed to the acquisitive society. 'Our way of life is very simple,' I was told often and proudly. And indeed it is. To the hustling Westerner, eye forever on the wrist watch, there is a sense of ease, even relaxation, in the traffic-free, advertisement-free, night-club free, almost noise-free cities, although the Koreans work with a sort of concentration and tenacity which is, on the face of it, far from relaxing or relaxed. And when not working they seem to be playing or studying with equal zeal. Its the sense of purpose, of steadily moving forward that does it, I think. The Korean word is *Juche*—self-reliance, independence, self-help—'all our own work' in short, and a quiet sense of national pride seems to infuse the whole picture.

It is difficult for us Westerners, disillusioned with 'progress', cynical about leadership, more than sceptical of ideologies, to accept easily DPRK exhortations

to work hard for the revolution, to work overtime in a 'Hundred Days War for Industrial Development'; to study the works of the 'brilliant iron-willed commander, the respected and beloved leader'. We look askance at a Party whose theories of literature and the arts demand only revolutionary or national themes; that requires hours of political study from schools and colleges and from workers and peasants after hours.

It was on the second day of my visit that I began to glimpse, during a long afternoon at the Kim Il Sung University, the extent of the politicisation of Korean life. Even though alerted to the phenomenon I was taken aback by it at first. Its genesis, and for the Koreans its necessity, at least for the present, became apparent only after long hours of discussion debate and some protracted reappraisals on my own attitudes.

Mining in Japan's History

David Conde

As early as AD 645, deposits of gold, copper and sulphur were found in what is now the present Ehime prefecture, and Chinese and Korean 'expert' semi-slave miners were brought to Japan to do the work. When the 'Great Buddha' statue was cast in Nara in 710, Japan-mined metal was used to make it, but foreign workers did the mining.

In the Ashikaga era (AD 1338-1602) mining for these same three resources gave economic and military power to the Daimyo (Lords) who were able to secure them. Sulphur was invaluable as an ingredient for fire weapons and primitive explosives, useful in the civil wars.

In 1483 Japan began to import 'Ming' Chinese copper coins for domestic usage, indicating the rise in importance of trade, merchants and bankers. In 1654 Japan bought its first guns, securing them from Portuguese, who had journeyed to southern Japan, by way of China; in 1546 Chinese trade ships were visiting Kyushu. It was at this time that the Sumitomo Firm went into business, and throughout the world Japan was believed to be a land 'abounding in gold and silver.' A system of monopoly called *za* (price fixing) came into being in Japan before America was born.

With gold as a stable symbol of wealth that could be stored, and copper a malleable metal dug up by slaves, business flourished in Japan four centuries ago. The *za* merchant guilds monopolized the sale of goods to the ever-warring local lords.

Sado Island, in the Japan Sea off Niigata, was for centuries a place of exile for such as deposed emperors and other political prisoners.

For several centuries gold was mined on Sado Island, with prisoners as miners. This business was operated by the shogun's treasury as proof of how crime could be made to 'pay'.

As guns had made possible larger and more costly wars against each other, but particularly against the Ainu natives, the merchants created a wholesale system called *mommaru*, to get an added 'cut' on trade in larger quantities of war-making supplies for ambitious lords. Sometimes the whole-saler was also the inn-keeper, money changer and provider of transportation.

There were no banks, but from the strategic location of their 'business', in society, sake merchants, Buddhist temples and pawn-shops often acted as money-lenders.

Some view the civil wars and the imposition of the Toyotomi and later the Tokugawa military dictatorships as the *result* of the exorbitant mercantile monopoly *za* system.

The Ashikaga shogun forbade the sale or mortgage of any land owned by samurai to merchants. But the social im-

pact of super-profit monopoly storable wealth had brought about an invisible transfer of national power the decrees did little to curb. As the local lords could no longer borrow money from merchant-bankers, they imposed ever greater taxes on the peasants. This brought mass misery.

For years amid starvation, cannibalism and civil war, the progress of trade and commerce continued (The semi-official *Japan Year Book*, p. 56, 1946-48).

Nobunaga Oda, the most powerful war leader to emerge in Japan of that time, destroyed the barrier-gates separating the districts of the old regime. He also ordered an end to the merchant monopolists who had been supplying the 'ins' with goods. In 1582 Oda was assassinated.

Hideyoshi Toyotomi, who had reached the post of 'trusted general' of Oda, through the aid of a gang of robbers, took over Oda's post as 'Generalissimo'.

As soon as he had defeated the local 'lords' of Mori, Date, Hojo and Shimazu, who were the 'loyalists' of the previous shogunate, Toyotomi acted to make all Japan subservient.

New Law and Land For New Order

In 1583 Toyotomi ordered all Japan to be surveyed so he could keep the best land and award strategic fiefdoms to *his* 'loyal' retainers. In the next year he decreed the style of costumes samurai and all others *must* wear. In 1588 all common people were commanded to surrender their swords for the proclaimed peaceful purpose of having them cast into a Daibutsu (Great Image of Buddha) but to make the people powerless against Toyotomi the dictator. Only samurai loyal to him could wear swords.

As confirmation of the fact that economics and the excessive profits of *za* war-goods vendors were responsible for the two military dictatorships of Japan, the country began to cast its first Koban gold coins in the same year 1588.

This fact marked the end of the simple and more honest barter system, replacing it with super-profits that could be hidden and hoarded by the fast rising merchants.

Three cruel years later in 1591 it was declared to be subject to severe penalty if anyone tried to change their occupation or hereditary status. Those on the bottom were to stay there forever, proclaimed the now-arrived head of state, a former son of a poor farmer, Toyotomi. Also to ensure that no new coupist should similiarly try to seize state power, Hideyoshi Toyotomi ordered that all people, including samurai, should form into 'five family associations' (*goningumi*) and all members of each were to be held responsible for any misdeed of any member. Japan became a national prison.

Having made secure his home-base, Toyotomi then planned an invasion of Korea, the Chinese mainland and Taiwan and the Philippines. The 'lords' of the new Toyotomi-granted fiefs were secure in their taxing power; the commoners were nameless powerless slaves. But the rich merchant-money-lenders, the old *za* masters, could finance an invasion if it promised plunder and profit; in 1592 Hideyoshi Toyotomi sent an army storming into Korea. For years it ravaged from one end to the other, looting and killing in every village and home. Tens of thousands of severed Korean ears were sent to Japan, making an 'Ear Mountain' (Mimiyama) in a Kyoto park.

Miners and Pollution

Looking back upon Japan's near 1,500 years of gold-copper mining and near 500 years of cartel price-fixing business, it is difficult to determine which was the greater pollutant (injurious) effect upon Japan's culture and people.

Japan never had capitalism such as in the West which resulted in an open ideological struggle and clashes with the forces of feudalism, seeking supremacy.

Instead Japan moved from the *za* price-fixing, non-competitive system long before the Tokugawa shogunate became all-pervasive under the 'restored' monarchy of Meiji, Taisho and Hirohito.

The newer Tokugawa shogunate military dictatorship lasted from 1602 to 1867. In 1868 the 'Meiji Restoration' transferred power to a new group of 'front men' while permitting the old merchant princes to emerge and do some international re-financing. Banker-merchant Mitsui, rather than Sumitomo, this time financed the new 'loyal' troops supporting the cause of 14-year-old emperor Meiji.

Merchant-banker Yasuda (now Fuji Bank) supported the new cause only a trifle less fiscally. Yataro Iwasaki, who founded the now huge Mitsubishi firm, was a retainer of the 'Lord' of Tosa, and he emerged as the major recipient of rewards from the newer 'loyalists' around the boy emperor and the coterie headed by 'Prince' Ito.

For repressive purposes these theorists devised a 'sacred' royal system whereby anything from a 'loyal' soldier failing to dust the emperor's gun entrusted to him or a business firm operated 'for the nation' by a 'loyal' leader, failing to make a super-profit, were 'traitors' of a different sort. The punishment for the former was often death; for the businessman, more incentives.

Anyone who might 'stir up' the people was guilty of that most serious crime, spreading 'dangerous thoughts'. Under the public peace maintainance laws enacted between 1900 and 1928, anyone found guilty of advocating any change in the imperial system or the equally sacred capitalist way of business could be sentenced to life imprisonment or death.

The proclaimed social philosophy of the new Meiji regime was for 'classless' paternalism. The March 1868 'Charter Oath' said in Pledge Two: 'Men of upper and lower classes without distinction shall be united in all enterprises.' In practice this was like the rider and the horse being 'united' in transporation.

What Is the Bigger Pollution?

The operation of the Ashio Copper Mine is a matter of cruel and dirty profit-making history and death.

In 1610 it was operated with slave-miners by the shogun government located near the Watarase River in Gumma prefecture north of Tokyo. When the Tokugawa shogunate was replaced by the 'Meiji Restoration', the Ashio Mine was turned over to a loyal 'former' samurai and it became the private property of the Furukawa Mining Company.

The Ashio and other copper mines in Japan 'did not show much progress until the Sino-Japanese war of 1894-1895 . . .' states the *Japan Year Book*. It goes on to say, 'The mines improved . . . were sold to private companies . . .' and concludes, 'After [World War II] all mining production was temporarily halted due to war damage and a serious labour shortage caused by the repatriation of Korean and Chinese miners.' (Chinese and Korean slave-miners from AD 645 to 1945, for 1,300 years.)

Against Pure Nihonjin!

The 'without' class distinction promised by Emperor Meiji had no validity in law. And in 1898 the Ashio Copper Mine, operated by Furukawa, was involved in Japan's first case of pollution.

From the 1870's and for a century Furukawa Mining dumped its copper mine waste sludge into the Watarase River. In 1898 protesting farmers charged their rice was being poisoned by Ashio waste-water arsenic, lead and copper and the resultant crops made the consumers ill or brought death.

Victim farmers in 1898 began a march to Tokyo to protest directly to the head of government. They got only as far as the town of Kawamata on the banks of

the Watarase, where they were halted and beaten by the police.

This imperial police intervention drove Ashio Copper and protesting farmers out of the news. But pollution continued with increased volume and company profits. Furukawa Mining Company became one of Japan's major zaibatsu (financial magnates), using foreign slaves, the people's copper, the people's river while poisoning the people's food. The deep anger of the residents of Gumma prefecture around the Ashio Mine became deep-seated and the region became historically 'Red'.

In 1910 Shozo Tanaka was elected to the Imperial Diet to seek government compensation for Furukawa's victims. Although Diet-man Tanaka appealed directly to Emperor Meiji for kindness for the sufferers, nothing was done. Furukawa Mining said it paid compensation to claimants whenever damage was proven.

In 1968 government engineers and chemists finally made a determination on what the quality and standards were for the Watarase River on which claims could be based by claimants.

By that time, the 1953 'amicable settlements' made with the majority of the farmer claimants were past the three-year statute of limitations of the Mining Industry Law.

In 1972 20 farmers from the Morita district filed four more petitions listing damage from the Ashio Mine to June 1973. They claimed more than Y3,870 million for damages, including reduced crops, for the twenty years from 1952 to 1973.

Recognizing that the times had changed and that the 'common people' could no longer be cowed, in fact they had become 'un-common', the Furukawa owners decided in February 1973 to close the Ashio Mine. The history of this profitable pollution was ended after more than 300 years of poisoning rivers and people.

The law-suits of the victims were largely invalid because the legal process was too slow and if one lived near such an environmental poison, life was always shortened and not worth living. Few miners lived beyond 35 years of age while the Japanese farmers, like the victims of Ashio Mine, lived little longer.

Faith in the Human Condition

Evolution and Revolution: the Rising Waves of Emancipation

By W. F. Wertheim.
(Penguin Books, London, 1974. pp. 416.)

There were three apparently isolated news items that reached my desk when I began to read this beautifully structured and incisive work. There is a sentence in the theoretical epilogue of the book that in a way could preface these three items: 'It is comparison that enables us to predict future processes,' including the capitalist mode of conduct in its most pathological forms. To a non-Marxist, the universe of capitalism is topsy turvy, functioning without laws, with events unrelated to each other. To a Marxist, however, the physical and social universe is one which functions according to observable laws, in which all phenomena are in the process of becoming and are inter-related. But these three news items, in their apparent separateness, reveal the *modus operandi* of capitalism as a global system, and its differentiation and variation on a time scale and at different national levels.

The capitalist *National Institute Economic Review* estimated that the British people's real disposable income is expected to plummet by 5 per cent between 1973 and 1975—a bigger drop in personal spending power than the UK suffered in the worst years of the slump in 1929-32.[1] The second item regards the collapse of the Bankhaus Herstatt (which pitched itself into bankruptcy because of its foreign exchange and gold speculation). Mr Hans Gerling, who directly and indirectly owned 81 per cent of the Herstatt equity at the time of the crash, had amassed a fortune amounting to £40 million or US$112 million.[2]

The third item suggests the continued counter-revolutionary violence perpetrated by India's power oligarchy against the broad masses, and specifically the peasantry of which the landless labourers are the most hapless victims. It is illustrative material for a study of the dialectics of violence which is one aspect of Wertheim's book. It throws a floodlight on the nature of Gandhi—who was little else save the ideologist of an emergent Kuomintang-species of ruling class; and which has proved to be one of the vilest in the Third World since the end of the Second War. Indeed, the non-violence of Gandhi turned out to be the highest expression of the counter-revolution, although this may not have been part of his intention. In short Gandhi was not the prophet of non-violence but, in reality, the architect of counter-revolutionary violence.

According to the *New York Times*[3], bondage or *Kamyoti* engulfs a peasant in permanent debt to the landlord. If he dies, the debt and bondage pass to his son. The number of landless labourers in some form of bondage is estimated to be 45 million. Wages may be as low as seven cents a day, or nothing, plus water at midday sweetened with molasses and some wheat or rice. But where there is oppression on such a vast scale there is rebellion, for as one organizer has put it, 'Previously, only a frown from the landlord would bring the landless to submission. Now the landlords have to assault the poor to keep them in place.'

To 'keep them in their place' has been the

1 *The Economist,* June 15, 1974.
2 *International Herald Tribune,* July 13, 1974.
3 *New York Times,* Oct. 5, 1973.

universal slogan of all ruling classes, but never in the scale of human history have the rising waves of emancipation of all mankind been so conspicuous as in our times. It is this last aspect which sets the tone and gives colour—and hope—to the broad sweep of Wertheim's analysis. It was not fortuitous that Darwin's *Origin of Species* and Marx's introductory essay *Towards a Critique of Political Economy* appeared in 1859, and that when *Capital* appeared seven years later its author offered to dedicate it to Charles Darwin. Social Darwinism gave expression in the writings of such 'vulgar' sociologists as Herbert Spencer to the bourgeois ethic and became the counterpart of the 'vulgar' economists of the 1840s and 1850s with such representatives as Frederic Bastiat, John Stuart Mill, etc. It was the ideology of bourgeois individualism and profit maximisation that became its doctrinal pillars which were sanctified by the institutional foundations of modern capitalism. In essence the ideological foundations of monopoly capitalism do not differ from its nineteenth century precursor since it is rooted in capitalist social relations of production.

The very dialectics of competitive capitalism triggered its opposite, namely the rise of monopoly capitalism, imperialism and fascism which have now become its supreme expression. The process of evolution, far from being unilinear, is dialectical, that is, development does not proceed without conflicts and frictions. This indicates that there are contradictory aspects—primary, secondary, tertiary, etc. within each phenomena.

A study of Russia (the words Soviet Union to describe that country today is a misnomer since the word Soviet assumes the hegemony of the dictatorship of the proletariat and a close cooperative effort of working peoples in the Union. That condition has ceased to exist and hence it is mandatory to revert to its original name) and its degeneration to revisionism is called for. Wertheim touches on this problem, but it is necessary to delve much deeper into the pathology of revisionism to understand its basic laws—which had its roots not only in post-Stalin Russia but well before. It was the genius of the sick Lenin on the eve of his death (Jan. 1924), to have perceived this process at work.

> *Our worst internal enemy*, he wrote on the 6 March 1922, *is the bureaucrat—the communist who occupies a responsible (or not responsible) Soviet post and enjoys universal respect as a conscientious man. He is very conscientious, but he has not learnt to combat red tape, he is unable to combat it, he condones it. We must rid ourselves of this enemy, and with the aid of all class conscious workers and peasants we shall get at him.*

A change on the scale required was never to be achieved.

On the 6th October 1922 he wrote to Kamenev. 'I declare war to the death on Great Russian chauvinism. As soon as I get rid of this accursed aching tooth, I shall bite into it with all my healthy teeth.

'It must be *absolutely insisted* on that the Union Central Executive Committee should be *presided over* in turn by a

Russian
Ukrainian
Georgian, and so forth
Absolutely.'

To be sure the 'Union' is now entirely dominated by ethnic Russians and Ukrainians—white men—with Asians relegated to the outer rim of the periphery.

This raises a host of problems which cannot be fully treated within this very short review. When did Russian revolutionary theory and practice become transformed into counter-revolutionary policy and hegemonism? What were its historical roots in the late twenties and thirties? The mere infantile babbling that informs us that it was a post-Stalin creation is unworthy of comment. For hegemonism, to take the example of China alone, began well before the demise of Stalin himself. Yet there is no historical law which indicates the judgement of Franz Kafka that 'every revolution evaporates and leaves behind only the slimes of a new bureaucracy.' In Russia it surely did; China was saved from the descent into the maelstrom by the Cultural Revolution.

As Wertheim sees it, it was the contribution of Mao and the Cultural Revolution to have broken new ground, and it is quite possible that Mao's main objective, in starting this experiment and upheaval at the end of his life, was to remind the young, once and for all, of the true, ultimate principles of the Chinese revolution. The downfall of Lin Piao and the critique of Confucius are some of the forms that contradictions have taken in China. And

it was the Chairman's major achievement to have seen that a fraternal world does not arise with the nationalization of production, distribution and exchange. Lenin, as we have seen, and other Bolsheviks had already perceived this elemental truth in the early twenties. The acorn had become the giant oak. When then did the dialectics of history transform the October Revolution into an enslaved weapon of the counter-revolution? Social revolutions, as Wertheim notes, are essentially uprisings of one class against another in which one can differentiate bourgeois revolutions and proletarian revolutions. But revolutionary processes can never lay claim to finality if only because historical forces are irreversible, as witness today the gathering momentum of the return of capitalism to Russia.

> *The issue of who will win in the revolution can only be settled over a long historical period*, declared Mao. *If things are not properly handled, it is possible for a capitalist restoration to take place at any time. Let no one in the Party think that everything will be all right after one or two Great Cultural Revolutions or three or four.*

This once again reaffirms contradictions at the heart of all social processes and recalls the verdict of the young Marx in 1842 when he defined in the Rheinische Zeitung his own position which was 'ruthless criticism of everything that exists, ruthless in the sense that this criticism will not shrink either from its own conclusions or from conflict with the powers that be.' The relationship, therefore, between the Cultural Revolution and Marx is a direct one. Indeed, it is the reaffirmation of Marxism in its most pristine purity.

If counter-revolution arose within the revolutionary framework of Russia it is endemic in most of the Third World countries which are the most exploited segments of the international capitalist economy. Wertheim marshalls an impressive amount of material which he weaves deftly into a neat theoretical framework. It is impossible for a reviewer to do justice to all of his insights, but what deserves to be pointed out is his shrewd dissection of Regis Debray's *Revolution in the Revolution* which the author has now repudiated. He draws the divergent tactical and strategic approaches between the Chinese (and Vietnamese) example and that of Debray and Guevara, Perhaps the most important model for the Third World will be the successful revolutionary struggle in Vietnam, against a seemingly overwhelming foreign power. Yet, even here the rule will apply that revolutionaries should never repeat the last revolution.' Moreover the tribute to the grandeur of Guevara is not obscured despite his shortcomings, and in a remarkable tribute which sheds light on Wertheim's powers of analysis and his many sidedness he notes:

> *Guevara's failure in Bolivia will not be lost either, both for its example of human greatness and for the object lessons it provides on the weaknesses of* focismo.

The world as a whole is now in a state of revolutionary ferment—on a scale never seen before. Even within Russia and its empire the stirrings are deep as they are in all the leading capitalist countries now thrashing in the cauldrons of monetary upheavals, mass unemployment, economic stagnation, competitive devaluations, import control and all such beggar-my-neighbour stratagems.

For Wertheim and millions of others—with all the rich material that Russia has coughed up over the past four decades—China's Cultural Revolution, its struggle against hegemonism at home and abroad has been a source of inspiration for—tens of millions. 'And what if the Chinese revolution, despite all efforts, ends up in a Thermidor', he asks. To this his answer is firm, based as it is on an understanding of the laws of history. 'In that case one can predict without any risk that there will be other societies, in Asia, in Latin America, in Africa, to take up the torch where the Chinese have left it behind.'

Such is the plenitude of vision of a work that exudes not only faith in the human condition, but the realisation that the new social order can be built only on the basis of ever evolving new forms of co-operation, and that capitalism as an historical category has reached the limits of its development.

Tom Wyckman

ON MANY HORIZONS *news and views*

Egypt Let Down by Russia

Egypt was reported Saturday to be facing a severe shortage of spare parts for its military hardware because the Soviet Union has supplied no equipment to the Egyption forces since last October's Middle East War.

Arab World, an authoritative daily news digest of Middle East affairs, said 75 of Egypt's T62 tanks and as many MIG21 jet fighters were unserviceable.

It reported that diplomatic sources in Beirut said there has been no replenishment of the Egyptian stock of ground-to-air SAM6 missiles, which were used heavily against Israeli warplanes.

AP, Beirut, Lebanon, 17 August

Gold Hunt in Andes

Hundreds of 'prospectors' were inching their way through almost inaccessible mountain territory in southwestern Colombia today, looking for a plane which disappeared six days ago with 24 people on board.

Their motives were not exactly humanitarian. The treasure hunters believed the lost plane was carrying US$8 million worth of gold.

Despite denials by the Avianca Airline, local newspapers have reported that the cargo included a fortune being flown from the Barbacoas gold mines in southern Narino state to the National Bank.

AFP, Bogota, 18 August

People in Indian Jails

The independent Hindustan Times yesterday published a letter bearing the signatures ot Western intellectuals and accusing the Indian government of torturing suspected Naxalites detained 'for several years' without trial.

The letter deplored that 'tens of thousands of political suspects have been kept rotting in Indian jails for several years without proper trials and subjected there to the most inhuman conditions as well as to physical torture.'

Officials in this capital of West Bengal state, the home of the Naxalite movement, did not comment on the letter, but informed sources said there were now about 2,000 Naxalites in jails in the state.

Reuter, Calcutta, 24 August

Bridge Stolen

Police of San Cristobal province announced yesterday that they had apprehended a gang of thieves who had made off with an unusual piece of booty during the night: a bridge.

Working all through the night, the thieves managed to dismantle the iron bridge over the San Antonio river—and they then sold the material as scrap, police said.

AFP, Santa Fe, Argentina, 29 August

GI Love

A petite young Thai woman, jilted by a former GI, has delayed her deportation to Bangkok, but she knows eventually she will have to return home and face humiliation before her friends.

Nong Nudh Wong, 27, met Dr Thomas Callahan, 30, a veterinarian now living in Florida, when he was a GI and she was working in a jewellery shop in Bangkok. He brought her to the United States to marry her, but sent her back because his parents were ill. She returned last November, but by then he decided he didn't love her. He claimed she was pestering him and turned her in to immigration authorities.

Her deportation was turned down on Wednesday by Judge Joseph Monsanto.

UPI, Miami, Florida, 30 August

Animal Crisis

More than 400 species of animals are in danger of extinction in various parts of the world, mainly because of pollution and hunting, the US Interior Department said in a study released today.

Among the endangered species listed are the gorilla in Africa, the jaguar in South America, the southern bald eagle in the United States, and the blue whale, the largest animal in the world.

Over 100 of the endangered species are in the United States. But in every continent, except Antarctica, some native wildlife is in danger, the department said.

Reuter, Washington, 30 August

Unbelievable

Corruption in the South Vietnamese army involves practices such as charging fees for evacuating wounded soldiers, Time magazine reports in its current issue.

The US weekly said South Vietnamese troops also profit from Saigon's war effort by charging for artillery support, shaking down merchants travelling through military zones, collecting salaries for non-existent troops and selling military aircraft space to civilians.

Time says its story is based on a secret report prepared by psychological warfare officers.

It says the rate for evacuating wounded ranges from eight US dollars for an enlisted man to 25 dollars and up for an officer.

The charge for artillery support is about two dollars a round.

One Saigon battalion investigated by psychological warfare specialists was collecting pay cheques for 360 troops, while only 68 were in evidence, Time adds.

Reuter, New York, 1 September

Russian Bases

The Pentagon yesterday identified three 'major bases' which President Gerald Ford said last week were used by the Soviet navy in the Indian Ocean.

Defence Department spokesman Col. Burke said they were at Berbera in Somalia, Umm Qasr in Iraq, and Aden, South Yemen.

President Ford claimed in his first press conference on Aug. 28 that the Soviet Union had three major bases in the Indian Ocean.

Shortly afterwards the Soviet news agency Tass refuted the allegation and added: 'In fact there is no Soviet military base in the Indian Ocean, much less three'.

AFP, Washington, 4 September

A Hungry City

Calcutta is a hungry city. It is a city where thousands survive each day on a slice of bread, a bowl of rice, a potato, a scrap of garbage.

It is a metropolitan area of nine million people, where the thread between life and death seems precariously taut. The city is now stricken: tens of thousands of frightened, impoverished peasants have surged in over the past few months because of drought and hunger in surrounding West Bengal and the neighbouring eastern states of Bihar and Orissa.

Rice and wheat staples are in short supply. Fish, chicken, vegetables and spices are now out of the grasp of millions. Market prices have climbed week by week, and the lives of middle-class clerks, shopkeepers, teachers and businessmen are in torment.

South China Morning Post,
Hongkong, 7 September

17.7m Rats

A total of 17,711,081 rats were exterminated by the government throughout the Philippines in the last fiscal year ending last July, it was announced today.

The Bureau of Plant Industry said that out of the 920,055 hectares of land infested by the rodents, 869,833 hectares were treated with chemicals under a joint co-operation programme between the West German and the Philippine governments.

AFP, Manila, 8 September

Woman-lib in Mexico

Mexican women will ask Congress to revoke a law which at present says husbands are the only ones who can authorize their wives to work.

Magda Monzon, Secretary General of the Labour Congress' Women's Sector, told newsmen that such a law discriminates against women.

AP, Mexico City, 8 September

Don't Wear Tights

Men who wear tight trousers are in danger of becoming sterile, a leading Brazilian urologist warned yesterday.

Dr Corintho Santos Filho of the University of Goiania said that sterility in men is caused by high temperature of the testicles when they are squeezed too close to the body. This temperature, he said, hindered the development of spermatosoa and resulted in a gradual lowering of fertility.

However, the doctor added, when men cast off their hipster trousers and returned to more baggy ones, their fertility would return after several months.

AFP, Brasilia, 11 September

Neelgais Take Over Airport

A family of four Indian wild blue cows has taken up residence at Delhi's Palam Airport, posing a serious threat to take-offs and landings.

Airport authorities say they have been unable to remove this aviation hazard because the neelgai is a protected animal in India, hence cannot be destroyed.

'This is our problem,' an airport official explained. 'Last year it was the vultures and this year it is the neelgais. The wild life chaps and religious groups would be up in arms if we do anything to these animals.'

UPI, New Delhi, 13 September

Bulldozers for Art Show

'It's just like Czechoslovakia,' one man shouted as a handful of Russians pelted the advancing Soviet bulldozers with balls of mud.

The mud failed to stop the bulldozers from smashing up an abstract art show, however, just as rocks couldn't keep Soviet tanks from overrunning Czechoslovakia in 1968.

Bulldozers, water trucks and burly police barreled in yesterday to disperse about 500 men, women and children gathered in a Moscow suburb for an unsanctioned exhibit of abstract art.

The Soviet Union arrested six artists, manhandled some foreign diplomats and assaulted five Western newsmen.

UPI, Moscow, 16 September

Last POW

Emmet Kay, the 'last American prisoner in the Indochina war', severely criticized the American war in Indochina following his release on Wednesday by the Pathet Lao who had held him prisoner more than 16 months.

Mr Kay said he regretted having participated in the Laotian conflict in his capacity as a pilot for the Continental Air Service which was used in Laos by the CIA.

In an exclusive interview Mr Kay said he had doubts about how the American authorities would receive him after the many pacifist statements which he made during his detention, but said that he was not afraid.

AFP, Samneua, Laos, 20 September

Barefoot Doctors Praised

The World Health Organization (WHO) has praised China's 'barefoot doctors,' who serve rural areas, for showing that developing countries can achieve good health standards at a minimum cost.

WHO assistant director-general Lucien Bernard, after visiting China with a WHO study mission, said the health of the Chinese people seemed excellent, particularly that of the children.

He told the WHO magazine, World Health, that he saw numerous possibilities for collaboration between WHO and China, particularly in maternal and child health, family planning, community health services and the role of barefoot doctors.

Reuter, Geneva, 21 September

Abandoning Babies

An alarmingly increasing number of young Japanese mothers are killing their babies or abandoning them to die because of family trouble or incapability or even dislike of bringing them up.

A Health and Welfare Ministry survey covering 401 such cases reported between April 1973 and last March, said 135 young mothers killed their babies and abandoned their bodies.

AFP, Tokyo, 23 September

Experts' Views

China's efforts to increase food production received glowing notices yesterday from a group of American plant scientists who have just ended a four-week tour of Chinese research institutions and communes.

'You had to look hard to find a bad field,'

said Dr Norman Borlaug, the plant breeder who won the Nobel Peace Prize in 1970. 'Everything was green and nice everywhere we travelled.'

The scientists found their hosts extremely reticent when asked for crop estimates, but came away with the general impression that the crop now about to be harvested was exceptionally good, possibly the best China has known.

That impression has weight, for the 10 scientists in the delegation are all experienced crop observers with wide experience in Asia.

South China Morning Post,
Hongkong, 26 September

No Kung Fu on TV

Imported television programmes condemned by the Mexican Government as fostering a cult of violence will disappear from the country's screens tomorrow, a Government spokesman said yesterday.

They will be replaced by extra hours of Government programmes under a decree by the Interior Ministry, he said.

The ban on 37 US and Japanese series was first announced by the Ministry last week on the grounds of the impact they jointly produce on television audiences.

Among the series which will disappear are 'The Untouchables,' 'Kung Fu', 'The Fugitive', and the Japanese-made 'Ultraman'.

Reuter, Mexico City, 29 September

TU-154 Not Wanted

Egypt has cancelled a deal involving eight Soviet TU-154 airliners bought from the Soviet Union last year, the weekly Akhbar El Yom reported yesterday.

The national airline, Egyptair, grounded its fleet of TU-154's in July after four Soviet experts and two Egyptian pilots died when one of the airliners crashed on a training flight.

The weekly quoted the Chairman of Egyptair, Mr Gamal Arfan, as saying that Soviet aviation experts had confirmed 15 'serious technical errors,' previously detected by Egyptian experts, on the very day the training flight crashed.

Reuter, Cairo, 29 September

307 Years' Imprisonment

A provincial administration clerk was sentenced to 307 years' imprisonment after the court found him guilty of swindling more than US$12,570.

AFP, Bangkok, 1 October

Delhi Stays Hot

The Indian Government today banned the use of air conditioners in offices, factories, cinemas, hotels and private homes in its latest restriction on power consumption.

Temperature here yesterday reached 37 degrees.

Reuter, New Delhi, 1 October

War on Long Hair

The Singapore Government, following an anti-long hair policy on males within its own departments and those dealing with them, has decided to extend the policy to employees of private business firms—including foreigners—the authorities said today.

The Chinese Chamber of Commerce said it had received a letter seeking support for a three-month anti-long hair campaign, beginning in November, organised by the Home Affairs Ministry.

UPI, Singapore, 2 October

Regrettable 'Aid'

Sri Lanka's only tyre factory built and equipped by the Soviet Union has proved to be an expensive venture for Prime Minister Sirimavo Bandaranaike's government, a Central Bank economist disclosed Wednesday.

'It's apparent that with few exceptions importing tyre has been cheaper in terms of foreign exchange resources than producing it locally, Dr R. C. Wanigatunga said in a survey he submitted to the government bank.

He said the factory which began production seven years ago uses outmoded production process and places unrealistic emphasis on the use of natural rubber in place of synthetic rubber. Natural rubber is one of the country's best foreign exchange earners.

UPI, Colombo, 3 October

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