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# THE CHINA LETTER



Number 58

August 1976

Dear Sir:

NOBODY WILL EVER KNOW, at least outside China for the foreseeable future, the full extent of the damage caused by the July 28 earthquake in Tangshan.

But, this we do know:

---China's coal production suffered severely. Damage to the Kailuan mines alone will cost China at least a million but probably closer to two million tons of coal production this year. (And don't believe for a moment that China saved "all but a few" of the 10,000 miners underground at the time of the quake.)

---Damage to the steel plant in Tangshan and disruptions at other steel mills due to the quake and the disruption of coal supplies will result in a loss of up to 400,000 tons of steel production.

---An estimated loss of 500,000 tons of cement production will result from damaged or destroyed plants.

---As much as 25-50 million pieces of ceramic products, mainly household goods, will not be produced this year because of the quake.

---It's impossible to put a quantitative figure on agricultural losses. But the affected area is an important agricultural region. The losses were not so much in terms of production but in terms of the drain on reserves and the damage to water conservancy works.

---In addition to the direct damage to rail, road, pipeline and port facilities in the immediate quake area, transportation in various other parts of the country has been disrupted. Trucks, trains and aircraft from all over China have been sent to the quake area. All of this is going to cost the Chinese economy millions of dollars in lost or disrupted production.

---Transportation delays and the need to divert goods intended for export to meet domestic requirements will result in a loss of a minimum of US\$100 million in foreign trade.

That's just some of the impact of the quake in the Peking-Tientsin-Tangshan area. Don't forget that two other severe quakes rocked Yunnan and Szechuan provinces.

Those quakes didn't cause as much direct damage as the one in Tangshan. But they did cause a further drain on supplies and transport facilities.

So...our estimate is that the damage and disruptions caused by those quakes will result in a decline of as much as 5% in China's total Gross National Product performance this year.

THE CONTINUING POWER STRUGGLE in Peking is beginning to have some serious political and social effects throughout China.

We're talking about the growing signs of a breakdown in discipline, rising crime, a tendency towards factional fighting like that which took place during the more violent phases of the Cultural Revolution.

This isn't speculation. Reports from China's provinces that we've monitored speak in surprisingly frank terms about the breakdown in discipline and the resulting problems.

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And the reason for this development also is clear: Because of the continuing uncertainty over which way the wind is blowing in Peking, lower level officials are reluctant to take a firm stand on issues for fear of later being criticized and purged.

Thus there is a weakening of authority which is directly leading to a breakdown in discipline.

Higher level authorities---especially those at the provincial level and the people they support in Peking---may even be letting this situation develop deliberately.

It's fairly obvious that the factional struggle in Peking has reached a stalemate, with neither side being able to completely seize power.

The so-called "radicals" continue to control the media. They are strongest in Peking. But out in the provinces power rests in the hands of those who mainly support the so-called "pragmatists".

What is happening right now may well be a case of the "pragmatists" letting the country get somewhat out of control so that they can later move in to control the situation, pick up the pieces and the process put the "radicals" down once and for all.

Something is going to have to give before too long. The economic problems created by the earthquake in North China and the growing tendency towards a breakdown in discipline cry out for a strong leadership.

Several important central government, Party and military posts remain vacant. They probably can't be filled until the power struggle is resolved.

A showdown is coming...probably before the end of this year.

IF YOU WANT AN ADVANCE PEEK at some of the policies that China likely will be pursuing in three or four years from now, read what is being written about the policies that were being pushed by ousted Vice Premier TENG HSIAO-PING.

Although Teng's policies and programs now are the subject of intense criticism in China's press, their basic thrust is almost certainly going to be revived at some future date.

Those policies and programs were laid out by Teng in three documents:

1. "On the General Program for all Work of the Party and the Country."
2. "Some Problems Concerning the Work of Science and Technology."
3. "Some Problems in Accelerating Industrial Development."

The full texts of those documents have not been published outside China. But the gist of Teng's message is clear.

Basically, Teng formulated new policies to deal with what he saw as major management problems affecting all sectors of China's development.

Politically, he wanted an end to a lot of the political activities that tend to affect production.

He wanted a change in the educational system to favor brighter students and provide them with a solid education, especially in the sciences.

He wanted the country's limited number of scientists and technicians to be freed from political interference so that they could devote full time to their specialized tasks.

Economically, Teng wanted to tighten up management control. One way was to place the nationally-important industries under the direct control of the central government ministries.

He proposed stepping up China's exports of minerals (mainly coal and oil) to pay for much expanded imports of foreign plant, equipment and technology. This, he argued, would make it possible for China to achieve a technical transformation and to absorb the country's huge and growing labor force.

Teng also was in favor of seeking more foreign assistance to help develop certain areas of the economy. He wanted to use more material incentives to stimulate worker enthusiasm and production.

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All of these policies pushed by Teng Hsiao-ping are now labelled as heresies in terms of the doctrines of MAO TSE-TUNG.

Much of what Teng was advocating, however, has been badly distorted by those who are behind the criticism campaign. The problems that his policies were designed to tackle certainly are real, disregarding whether or not those policies would have been effective in coping with them.

There's a lot to be learned from the three documents produced in the name of Teng about China's development problems and possible solutions to them. We'll be taking a much more detailed look at those documents next month.

LIBRARY CORNER: You might be interested in adding to your commercial library on China a series of pamphlets called "China In Development" produced by the China Council for the Promotion of International Trade.

Some of the titles produced so far in English include "An Introduction to China", "China's Textile Industry", "Water Conservancy in New China" and "Self-Reliance and Independence in Developing Foreign Trade".

These pamphlets give a good, brief look at how China sees various aspects of its development effort.

You can get free copies of the "China In Development" series by writing: Guozi Shudian, P.O. Box 399, Peking, China. Or you can ask Guozi Shudian to give you the name of its agent in the country where you live.

## The Other Chinese

ONE OF THE MOST SERIOUS CHALLENGES so far to Taiwan's membership in an international organization will take place at the forthcoming meeting in Nairobi of the International Satellite Corp. (Intelsat).

China has been quietly maneuvering for months to get Taiwan, one of Intelsat's original members, kicked out of the organization and replaced by China. Peking at present has only observer status, although it is allowed to use Intelsat satellites for international communications.

If Peking's game plan is successful, it will force Taiwan to leave the Nairobi meeting, claim jurisdiction over the island and thus Taiwan's interests in and access to Intelsat.

And if that happens, there is no way that Taiwan will be able to continue using the Intelsat facilities which are so important to its economic and commercial activities around the world.

There also is some concern that a successful Peking move to oust Taiwan will mean the politicization of Intelsat, which up to now has accepted as a member any country that agrees to go along with its rules and requirements.

The whole issue poses an especially sticky problem for the United States.

As the country that launched the Intelsat satellites, it bears a great deal of responsibility for how the organization operates. It thus will be extremely difficult for the U.S. not to back Taiwan. And that, of course, won't go down well with Peking.

Taiwan may have compounded the problem it faces by opting some time ago to avoid giving public attention to China's challenge.

Having failed to create a public uproar over the issue, some Taiwan supporters now fear, China may be able to go into the Nairobi meeting claiming little or no opposition to its move.

We'll keep you posted on what happens.

JUST AS WE PREDICTED would happen (TCL 53), the growth rate of China's petroleum industry is now dropping back to a more modest level.

Oil output expanded by an annual average of some 20% between 1965 and 1975. That was largely the result of the fact that production 10 years ago was at such a low level that high output growth rates could be relatively easily achieved.

But now China's oil output is so much higher that tremendous amounts of capital are needed to sustain that earlier growth rate.

And China simply does not have the available capital and skilled manpower resources needed to meet the various demands placed on them.

The result: During the first half of this year petroleum output increased by a more reasonable 10% over the same period of 1975.

Given the heavy demands on China's available capital and other resources in the wake of the destructive North China quake, it is unlikely that total oil production for all of 1976 will be up by much more than 10%.

What all this means is what we've been telling you for some time now: Those earlier estimates of China becoming an oil producer the size of Saudi Arabia by 1985, and thus becoming a more important factor in the world oil picture, have been greatly exaggerated.

CHINA'S FOREIGN TRADE is the area that is feeling the greatest immediate impact of recent political developments and natural disasters in the People's Republic.

Unless there is a marked improvement in the situation during the remaining months of this year, China's 1976 foreign trade figure is almost certainly going to be well below that of last year.

Although the Spring Canton Fair (April 15-May 15) was a disappointment for many foreign businessmen, all the indications up to that time were that China's foreign trade was running well ahead of the figures for the same period of 1975.

But since June, there has been a considerable fall-off in China's trade.

That's particularly true of Chinese imports. But foreign businessmen also are having trouble buying from China.

A major reason for this is the campaign against former Vice Premier TENG HSIAO-PING. Among other things, Teng is now being criticized for putting too much stress on foreign imports and attempting to sell Chinese resources to pay for them.

The effect that has is that Chinese officials are being very wary about trade decisions lest they become targets for criticism.

Then came the disastrous earthquake in North China that has had a serious impact on foreign trade.

We're not talking just about the disruption of export industries and of transportation, or the need to divert supplies to the disaster area. Another important factor is that the quake and the relief effort have disrupted the Chinese bureaucracy. Many trading officials are now preoccupied with other things.

These developments, combined with a sizeable reduction in Chinese grain imports this year (see TCL 56), are creating serious problems and considerable concern for China traders.

Japan's two-way trade with China this year is expected to be 6%-8% below that of last year. Because of the declining grain imports, China's trade with Canada is running at only half the level of last year. Sino-U.S. trade is likely to be off by as much as 25%. West Germany is experiencing a similar fall.

There are exceptions to this. Britain's trade, for example, is running ahead of last year. So is Hong Kong's.

But a check of China's major trading partners by THE CHINA LETTER reveals that most of them are experiencing trade declines.

Whether there will be an improvement in this situation will depend to a large extent on the coming Autumn session of the Canton Fair. The results of that Fair thus will be watched more closely than usual.

## Memo From Tientsin

BLACKBOARD NOTES: Among the few foreigners who are allowed to live and work in China on a longer term basis are those who are hired by Peking to teach foreign languages.

These foreigners see, as much as any foreigner can, the real China and the real problems that face the country.

The problem of how to teach is one that continues to be heatedly debated in China. And for good reason, as this experience of one foreign teacher who worked in Tientsin well illustrates:

"The level of the students was low---because they had spent their first two weeks repeating isolated sounds after a teacher or tape recorder, which ensured that they would never again regard language as a means of communication.

"This has something to do with their political training, I'm sure. They earnestly assent in every new movement and shout the new and correct slogans, which may be diametrically opposed to the slogans of yesterday and to the practice of today, but it makes not the slightest difference to their actual practice.

"Teaching the students rubbed my nose in the suspicion and disrespect with which the authorities regarded me. Everything had to be vetted. In one of my examples I once had CHOU EN-LAI and LIU SHAO-CHI in the same sentence, contrasted and differentiated. The officials brought it back to me and had it changed 'because the masses wouldn't like it', 'because the students wouldn't agree' etc. That decision was made without actually consulting the masses---typical of the formalism, empty phrase mongering, that afflicts the cadres.

"They were insisting on using teaching material from Peking Foreign Language Institute No. 1, which as usual was ungraded and not written according to teaching points. I wanted to use some of the useful skills I'd picked up in my teaching course, and teach them methodically.

"'No!', came the answer. 'We must have respect for our brother institute'. The answer was not surprising, since it came from the top leaders who had never taught or studied language.

"But later there were no oral texts provided, and they didn't notice. So I made up my own material, and then got the students to discuss the good points and bad points of my teaching. The answer was unanimous: They liked my material, and in turn I went to the leaders and said, 'Look what the masses say!'. From then on I wrote my own material, though it was still thoroughly vetted.

"A very striking feature of Chinese life is the importance of the written word. It makes teaching language impossible: Pupils will pick up a copy of Peking Review and you will have the damndest job persuading them that it's better to say the thing correctly, not as it is written simply because it is written.

"And students would absolutely demand that everything I said in class should be printed, or they felt that they had learned nothing. Try to correct their pronunciation and they would say: 'But write it for me!'

"It was useless to explain that oral skills only come with oral practice. The result: My students could recite dialogues beginning to end---but they could never respond to a key question from the dialogue."

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ONE THING CHINA HAS GOING for it at a time of growing political uncertainty and mounting signs of a breakdown in discipline is that 1976 looks like being another year of excellent agricultural performance.

That means there will be no food shortages to aggravate the situation.

Despite a halting start due to erratic weather, China is expected to have another record grain harvest this year.

Our estimates indicate grain output could near the 290 million ton figure this year, a healthy 4% to 5% up from last year's output of some 280 million tons.

Spring and summer harvests, including the important winter wheat crop, were very good, topping both total and per hectare yields of previous years.

Estimates are that the early rice crop was some 60 million tons, up about 5% over the early crop last year. Early rice accounts for some 40% of total production.

The more important late rice crop is, by all accounts, growing very well.

The winter wheat production---which accounts for the bulk of total wheat output---was an estimated 37 million tons, also a record.

Barring a bad turn of weather before the harvests in October and November, the late crops also are expected to be bountiful.

Due credit has to be given China for the fine job it has done in coping with the vagaries of the weather and insuring good harvests.

We've told you before (TCL 53) about the extensive water conservancy work that has been undertaken over the years to better control the effects of weather on production. That work undoubtedly is a key factor in the continuing good harvests.

The mechanization drive launched last year is continuing. That, too, will have a positive impact on future agricultural production.

WHILE THE WORK CHINA HAS DONE to guarantee good harvests is for the most part very positive, there is one area of activity that could create serious difficulties in the future.

That is the sinking of large numbers of wells in the northern China area to provide water for crops during dry spells.

Today there are an estimated 2 million pump wells in use in that area. And they have been vital in guaranteeing good harvests over the past three to four years.

But...and this is something China is beginning to show some concern about, the prolonged drought and the continuing large-scale use of wells for irrigation are beginning to affect the water tables in the northern China area.

We've received numerous reports of China having to use deeper and deeper wells because of the lowering of water tables.

A few years of normal or near normal rainfall in the dry areas of the North might well raise the water table levels. But if the moisture patterns of the past few years continue, the prospect of increasingly lower water tables is a real---and potentially dangerous---possibility.

BACKGROUND BRIEFING: One of the often overlooked developments of China's agriculture is livestock, and especially hog production.

China's animal population is huge---certainly well over 400 million head, and probably approaching 500 million.

There are currently an estimated 260 million pigs, 90 million sheep, 48 million beef cattle, 18 million water buffalo and nearly 1.5 million dairy cattle in the country. In addition, there are large numbers of domesticated herds of deer, yak and smaller animals such as rabbits.

In recent years, communes and production brigades have been ordered to quickly increase livestock numbers...and to do so on a collective basis. Individual ownership or sideline production---of livestock also is continuing.

While the greatest emphasis has been on expansion of the pig population, other livestock have not been neglected. A massive effort to sow new grasslands for sheep and meat cattle is under way.

New breeds also are being introduced. France, Canada, Britain and Australia all have supplied China with better breeds.

Dairy herds are being enlarged, particularly near larger cities, backed by modern milking, processing and canning facilities.

Pigs are stressed for a number of reasons: They can be increased in numbers rapidly with a minimum of effort, they lend themselves to collective breeding and care, and they are a significant source of natural fertilizer.

A key problem in all this livestock expansion is fodder. Collective piggeries undoubtedly consume far greater quantities of grain than sideline production--- including corn, wheat, sorghum and sweet potatoes. Various substitutes also are fed, such as cassava in the South, wheat and rice husks, and waterlilies elsewhere.

Just how much of a drain on available food supplies this large animal population causes is one of the great mysteries about China's agricultural scene. But it must be large.

Greater consumption of meats and dairy products can only partially offset the grain feed loss, although giving the Chinese diet a better protein balance.

The expansion of China's livestock industry is not simply for domestic purposes. Livestock is becoming increasingly important in China's foreign trade.

Last year, for example, China shipped 1.5 million live head (mostly hogs) into the Hong Kong market. Bristles, hides, bone and other animal by-products are among China's cheapest export bargains. Canned meat products are highly rated overseas.

As China continues its effort to expand its livestock industry, there is going to be a growing need for modern processing facilities and equipment. There have been some imports of this equipment already, and more are very likely in the not-too-distant future.

## Peking Confidential

SIGN OF THE TIMES: There's no better indication of the breakdown in discipline in China than the fact that beggars have reappeared in many parts of the country.

Reports of beggars being seen in various cities around the country were originally greeted with skepticism by some foreign observers in Peking. No more.

Reason: Some foreigners residing in the Chinese capital have not only seen beggars in that city but have been on the receiving end of pleas for alms.

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WHO'S HELPING CHINA develop its off-shore oil potential?

American off-shore oil technicians recently hired by Peking on a contract basis.

Insiders in the oil industry tell us that the first ones that

have been signed up are oil rig workers who have been laid off because of the slowdown in exploration in Indonesia.

They say Peking is offering very attractive terms, but is having some difficulty in getting takers because the oilman are wary of China's puritan lifestyle.

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CHINESE AUTHORITIES STILL have a travel ban on top scientists involved in the country's defense industries---nuclear energy and missiles in particular.

That ban applies especially to those Chinese scientists who have studied in the United States. As a result, they have been unable to accept invitations to visit the U.S.

More important, such invitations at this time are a source of embarrassment and could be politically troublesome.

## China Chronology

July 1---55th anniversary of founding of Chinese Communist Party.  
July 6---National People's Congress Standing Committee Chairman and Chinese "Red Army" founder CHU TEH dies at age 90.  
July 10---U.S. Senate Republican leader HUGH SCOTT arrives in Peking.  
July 25---Former Australian Prime Minister GOUGH WHITLAM arrives in Peking.  
July 28---Earthquake of 8.2 on Richter scale, world's worst in 12 years, hits Tangshan-Fengnan area of Hopei Province, causing serious damage and affecting Peking, Tientsin.

## The Fortune Teller

IT WON'T BE TOO LONG before you'll be able to use one of your American credit cards in China.

Negotiations were moving along very rapidly and agreement probably would have been reached already except for the anti-TENG HSIAO-PING campaign and the anti-foreign turn it took.

The criticism of Teng for his "slavish compradore philosophy" put the negotiations on use of American credit cards in China temporarily off the tracks.

But word we get is that China is still very much interested in the idea. And agreement is likely to be forthcoming fairly soon.

YOU CAN LOOK FOR a marked upturn in real tourism in China next year.

This will be the first time since 1964 that China has seriously tried to tap its tourism potential.

We're not talking about "special" groups of people who are allowed to visit China but people who have no other interest in China except that of sightseeing and tourism.

Major cities that will be opened initially to these pure tourist visitors will be Canton, Kweilin and Shanghai.

ONE WAY YOU'RE GOING to be able to tell who's getting the upper hand in the on-going power struggle in Peking is how seriously provincial Communist Party officials come under criticism.

The so-called "radicals" are going to have to move against those provincial leaders if they hope to gain ultimate power, since those officials are providing the main support for the so-called "pragmatists".

Some provincial officials already have come under attack. And this could be the signal that a showdown is nearing.

DON'T BE SURPRISED TO SEE Peking getting a lot tougher with companies that are trying to maintain business relations with both China and Taiwan.

This is going to be especially true with American firms. But it also will involve companies from other countries as well.

Up to now, Peking has generally turned a blind eye to the practice of many firms of having business dealings with both Taiwan and China.

Reason for the change of attitude: A Chinese decision to take a harder stand on the Taiwan issue in preparation for the expected start of talks with the U.S., after the November elections, on full normalization of relations.

*Arthur Richards*

Arthur Richards

Chairman, Editorial Board



A few such plants were built (at Anshan, Wuhan, Maanshan and Paotow) but there was not a major push towards such modernization.

The total impact of this neglect of beneficiation facilities became apparent by 1974 when failures within the industry led to a sharp decline in steel output.

During early 1975, a top-level decision was made to switch the development orientation of the iron and steel industry to that of raw materials.

A new "unified State plan" was developed and launched in September of that year. Few details of the plan are known, but the emphasis clearly appears to be on providing modern beneficiation plants at consolidated mining centers.

Recent political developments in China (especially the ouster of former Vice Premier TENG HSIAO-PING) may slow down the iron mining modernization effort, since the industry is unlikely to develop as needed without the import of increasing amounts of Western technology and equipment.

Teng favored such imports. He was a major backer of the industry reorientation plan. But now his policies are being criticized.

China has imported a limited amount of equipment and technology for mining and ore beneficiation. It purchased one pelletizing plant in 1966 from Japan to gain German technology, which it has copied. It has purchased some shovels and other equipment more recently from the U.S. and Britain.

But much more will be needed to bring China's iron mines and beneficiation plants up to the levels needed both to support the current steel industry and its expansion.

China has a tremendous base to work from in developing its iron mining. Deposits are scattered throughout the country, with only the Southeast lacking in reserves.

The major mines continue to be concentrated north of the Yangtze. They are:  
Anshan---Old mining area. New open cast mine, Takushan, can supply ore concentrates up to 60% iron content. A large sintering plant has been added.

Wuhan---Two new mines, both underground, recently opened at Chengchao and Tahungshan. Huge Tayeh open cast mine is producing more than 3.5 million tons of 60% ore per year. Large sintering plant installed. Raw material demand will soar when new German-Japanese mill comes on stream in 1978.

Taiyuan---In Shensi Province, major iron mines being developed. Large sintering plant installed in 1970.

Peking---New mine closer to huge Capital Iron and Steel Plant opened with major beneficiation plant attached. Producing 60% ore concentrates. Older mine at Lunayen still functioning.

Paotow---Mines some distance from steel complex causing problems. A pelletizing plant capable of 1.1 million tons a year has been added to upgrade ores.

Penchi---In Liaoning Province, a large iron producing center. But ore very low grade. New Waitoshan mine can produce 3 million tons a year. Older Nanfen mine has 7 million ton output. Large beneficiation plant installed at Waitoshan.

Maanshan---One of best iron ore mining areas, in Anhwei province. Received good deal of investment since mid-1960s. Supports Shanghai steel mills.

China also has a widespread local iron mining industry supplying small blast furnaces in nearly every province.

China produces about 60 million tons of iron ore per year, with output growing only modestly each year. The country thus continues to import more than 1 million tons of high grade ore a year.

The other shortcoming of the industry, that of scrap, is a serious problem. It is estimated that China could use twice as much scrap as it can obtain domestically. Some of this shortfall is made up through imports.

Our estimate is that China will have to import about 3 million tons annually of scrap, pig iron and high-grade ore until 1980.

Or it will have to begin investing more in the beneficiation equipment needed to make better use of its plentiful, if low grade ore. China will, in the not-too-distant future, choose the latter course.

SPECIAL  
REPORT

# THE CHINA LETTER



SPECIAL REPORT

(Supplement to  
Issue No. 58)

Dear Sir:

CHINA PULLED A CLASSIC EXAMPLE of getting the cart before the horse when it set about in the early 1950s to develop a large and modern steel industry.

That error involved a concentration of effort on developing iron and steel plants to the neglect of developing modern mining, ore treatment and other raw material facilities.

The result is that China's iron and steel industry has developed only slowly (see our Special Report with TCL 56). And it will take some years yet---assuming the investment in modern mining and ore beneficiation facilities is made---before the imbalance can be rectified.

What happened is that China assumed it had more than enough iron ore to feed any size industry. And it is true that the country's iron ore reserves are immense... sufficient for major iron and steel production until well into the 21st Century.

But most of that ore is of very low grade and needs major beneficiation processes before it can be efficiently utilized.

Another shortcoming on the part of the Chinese was the lack of attention paid to securing adequate supplies of scrap. China's use of steel products simply has not been on an extensive enough scale to provide the volume of scrap necessary for a large steel industry.

Over the past few years, there have been indications that China's industrial planners have recognized these mistakes. Efforts are now underway to correct them.

But it is not likely to be before the early 1980s that the iron ore mining industry can catch up with the iron and steel plant capacity already installed or soon coming on stream. Shortages of domestically gathered scrap will probably continue even longer.

That means that if China is to maintain even a modest growth in its iron and steel production, it will have to continue importing fairly sizeable amounts of iron ore and scrap in the years ahead or begin investing more in modern mining equipment.

That's the general picture of China's iron ore mining situation. Let's take a more detailed look at this problem area in our SPECIAL REPORT: CHINA INDUSTRY PROFILES---MINING: PART II, IRON ORE.

When the Communists came to power in China in 1949 they were delighted to discover that the nation had enormous deposits of key minerals such as coal and iron ore.

From an initial estimate of 2 billion tons of iron ore reserves in 1949, the reserve figure has now soared to an unbelievable 100 billion tons. And many areas of China that may contain iron ore reserves have yet to be surveyed.

With only a few exceptions, however, that ore is "lean", containing only around one-fourth to one-third iron (fe) content. Richer ores from nations like Japan and Australia have one-half iron content.

Soviet and China of beneficiation---including fine-grinding and pelletization---plants.