Changes to the Newsletter

1. Introduction of Refereeing
A decision has been made to change the newsletter into a refereed periodical. While CEHN and its readers have hitherto been fortunate indeed in the quality of the submissions nobly made to the newsletter in its unrefereed form, there are grounds for believing that the flow of excellent submissions is likely to increase once CEHN provides contributors with the benefit of refereeing. As many readers have expressed appreciation for the “noticeboard” features of the newsletter, these will not be abandoned. The publication will retain its dual character as newsletter and journal.

Beginning with the first 1997 issue, all original articles exceeding 3,000 words will be sent to two readers. Other submissions may be sent out for refereeing at the editor's discretion. The newsletter will continue to welcome submissions of material other than articles (e.g. research and conference reports); these will be refereed or not as seems appropriate. In short, editorial policy will retain the flexibility needed for a dual-function publication, but contributors of substantial articles published in CEHN from issue 4:1 on will be able cite the newsletter as a refereed periodical for C.V. purposes.

An editorial board has been created to assist with refereeing and contribute more generally to the newsletter’s future development. As the membership of the board has not been finalized, it will be announced in the next issue. Subscribers may be confident, however, that the list of those who have so far agreed to serve represents a rich reserve of expertise, and includes both internationally respected senior scholars and — no less important — representatives of the newest generation of researchers. Scholars who are not board members may be asked to referee submissions as appropriate, and suggestions and initiatives from all subscribers, board members or not, will always be warmly appreciated.

2. Internet and Hard-Copy Publication
There are plans to post the newsletter on the World Wide Web in the near future. Further information will be distributed to e-mail subscribers as soon as it becomes available.

The editor will investigate possibilities for enhancing the appearance of the hard-copy version.

Cost constraints are real, but could be somewhat alleviated by the prompt payment of subscriptions. 1997 subscriptions (for hard-copy subscribers outside the PRC) fall due on January 1st. Full details will be found at the end of the newsletter.

3. Relaxation of Word-Limit
Internet publication does make possible some relaxation of constraints on the length of articles; however, even the Internet has limitations. The newsletter’s previous policy of setting a word-limit in the low thousands is herewith abandoned, but contributors are asked to confine their submissions to a reasonable length. The editor reserves the right to ask authors to condense long articles if necessary or consider serial publication. Short articles of the length that has been usual in the newsletter so far (1,500 to 3,500 words) will still be welcome.

4. Change of Editorial Address
The editorial headquarters of the newsletter are moving (with the editor) to the University of Sydney. From December 10th, all paper correspondence should be addressed to her at:
Dept. of Chinese Studies
School of Asian Studies
University of Sydney
Sydney NSW 2006
Australia

The e-mail address at Indiana State University should not be used after that date. The future e-mail address (effective from about Dec. 17th) will be: <helen.dunstan@asia.usyd.edu.au>.

It is anticipated that implementation of the above changes may impose delay in the publication of the first 1997 issue. The understanding of subscribers is requested.

Contents of This Issue
An article by Christian Daniels serialized in earlier issues of CEHN introduced the important ethnographic work of Yin Shaoting, of the Yunnan Provincial Museum of Ethnology. Readers will remember that Yin is the author of two books on the practice of swidden cultivation by non-Han peoples in Yunnan, and that his account vindicates their techniques from an environmentalist perspective. In this issue, we have the honour of presenting an article by Yin himself, a case-study of the recent impact of
population pressure on one Han Chinese Yunnan community and its immediate environment. The overall story of deforestation and erosion may sound familiar, but the experience discussed by Yin has a distinctive feature: this whole community lives in a karst cave.

The second instalment of Elisabeth Grinspoon’s two-part article on the realities of forest conservation in the Xishuangbanna nature reserve introduces a second case-study, that of an upland Dai community. The villagers of lowland “Mengguo”, described in Grinspoon’s first instalment, were shown growing rice, maize, and Amomum villosum inside the reserve, enjoying access to a variety of reserve forest resources (including timber), and destroying their own collective forest in the name of modernization and prosperity. In the case of upland “Mannan”, some of the issues (use of reserve land for growing rubber trees, the construction of an irrigation reservoir inside the reserve) are different, but the underlying problems are the same. In her conclusion, Grinspoon explores the combination of fiscal pressures, reserve-management policy considerations, and institutional interests which has created the present compromise: villagers are allowed to pursue “economic development” at the expense of biodiversity on the understanding that limited concessions will gain local cooperation for conservationist goals. The concessions made so far appear to go beyond those advocated in the last instalment of Daniels’s article (CEHN 2, no. 2). Only time will tell whether the policy can hold.

Also in this issue are, from Lawrence Crissman, an update on the China Geographical Information System Project, and, from Hugh Shapiro, a first contribution to the new “Teaching Ideas and Experience Section.” Shapiro shares with the CEHN readership an innovative syllabus-cum-bibliography on the history of Chinese science and technology. His comparative approach is informed by recent trends of thought in a scholarly community broader than that of sinologists alone. It is hoped that his initiative will encourage others to share their syllabuses (which may be quite different in terms of content and/or pedagogy) on pre-modern Chinese understandings of the natural world and on Chinese (or indeed East Asian) environmental history.

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Publications

Han Guanghui, Beijing lishi renkou dili [The Historical Population Geography of Beijing]. Beijing: Beijing Daxue chubanshe, 1996. 365 pp. 50 tables, 18 maps. A comprehensive survey of the demographic history of Beijing and the surrounding region, covering the period from the Khitan Liao dynasty (916-1125) to the Republic (1911-1949). The material is arranged by topics, and chronologically within topics. Topics include administrative geography; historical population statistics for both Beijing and its region; population growth and its determinants; migration; government measures to prevent excessive concentration of population in Beijing; and the geographical distribution of population.

environmental protection in early imperial China, covering both measures deliberately taken to protect the environment, and measures taken for other reasons whose effect would have been conservationist. The subject of environmental protection is divided into two broad topics: protection of nature and natural resources, and prevention and control of pollution. The environmental problems faced by society in the period in question are identified as: (1) severe deforestation; (2) the frequency and severity of natural disasters, especially flooding of the Yellow River; and (3) pollution both in cities (in the form of noise, dust, smoke, and waste) and in association with the mining industry. Evidence is presented that contemporaries were aware of at least some aspects of the environmental challenge that they faced.

**Journals and Newsletters**

*Environment and Development Economics.* A new quarterly journal, edited by Charles Perrings (University of York), and published by Cambridge University Press in association with the Beijer Institute of Ecological Economics, Royal Swedish Academy of Sciences. Besides book reviews and review essays, the journal will publish articles in two main categories: “Theory and Applications” and “Policy Options.” The intended readership includes those concerned with policy development as well as academic researchers. Submissions of work conducted in low-income countries and/or by younger scholars will be encouraged. The subscription rate for individuals is US$62.00 p.a.

*Pacific Circle Newsletter.* This newsletter is published by Pacific Circle, a commission of the International Union of the History and Philosophy of Science. Pacific Circle was set up in 1985 to promote scholarship in historical and social studies relating to Pacific science. Membership in the Circle (which includes a subscription to the newsletter) costs US$10.00 p.a. ($25.00 for three years). Cheques or money orders, payable to “Pacific Circle Newsletter”, should be sent to the editor:

P.F. Rehbock
Pacific Circle Newsletter
History Department
University of Hawaii
2530 Dole Street
Honolulu HI 96822
U.S.A.
Tel: 808-956-7675 or 8358
Fax: 808-956-9600
E-mail: frehbock@hawaii.edu

*Other Items of Interest*


**Internet Addresses**

*New List on Chinese Medicine*

This list is intended to foster discussion among academics, especially graduate students, doing research on the history and anthropology of Chinese medicine. The list was originally conceived as a forum for graduate students scattered around the world; in order to make it a more comfortable “place”
A Contemporary Village in a Karst Cave: The Case of Feng’ai Dong

Yin Shaoting

The Yunnan Provincial Museum of Ethnology

The Wenshan Zhuang and Miao Autonomous Prefecture of south-east Yunnan is a typical karst region. In appearance, the landscape is rich and beautiful, while the natural conditions would not be considered particularly bad — or so one might suppose. In fact, however, the land is barren, while human life is sustained only with great hardship. On the present economic map of China, this region is labelled as a poverty-stricken zone. The cause of the poverty lies in the stone. Rocks and stony hills may be thoroughly valuable resources in more than a few places, but here the stone is everywhere one looks and everywhere one puts one’s feet. Stone occupies by far the greater part of the living space available to human beings. It constitutes an obstacle and indeed a disaster, bringing huge difficulties and unending worry to the local inhabitants.

If such an environment were left free of human tillage, trees could still grow in the space between the rocks, while it might be possible for the stony hills to grow some forest cover. Were the forest cover thick enough, there would be rare plants and grasses, as well as birds and animals, clear springs and running brooks. Unfortunately, the Wenshan region offers no exception to the extreme overcrowding that plagues the whole of China. Zhuang, Yi, Yao, Han Chinese, and Hui (Moslem) communities live intermingled in this region; there are signs of human habitation everywhere, and the villages closely dot the countryside. How, then, do people who dwell in a world of stone subsist? The following account of a typical village will provide some insight into the great extent to which the environment influences and conditions human life and development.

The village in question is called Feng’ai Dong (Peak-rock Cave), and is indeed a village in a cave. It lies in Guangnan County, and is under the jurisdiction of the Anwang District Office of Nanping Township. Anwang is nine kilometres from Nanping, and the journey can be made by jeep or tractor in good weather. It is about another ten kilometres from Anwang to Feng’ai Dong by a narrow, winding path over uneven, boulder-strewn terrain. This means a walk of three hours or so. Rocky hills stretch out along the route, with valleys in between. Feng’ai Dong is situated half-way up the hillside in one of these valleys.

Viewed from afar, the entrance to the cave looks like the open mouth of a huge fish. The valley is completely silent, and the cave-entrance seems deserted, betraying not a sign of human presence. Only after going some tens of metres deep into the cave does one suddenly hear the mixed sounds of human beings, horses, hens, and pigs. At the same time, one’s gaze is met by a unique phenomenon. In the depression made by the cave floor stand houses, closely packed together and arranged in higgledy-piggledy order. On the roofs, besides the heaped-up golden, russet, and pearl-white heads of maize in storage, there are all manner of grain-bins, sieves, baskets, winnowing-trays and such-like implements. These form a motley picture, strange beyond compare, beneath the stalactites of all imaginable shapes that hang from the cave’s roof. It is truly astonishing to come upon a large, Han Chinese community of 287 individuals in 56 households deep inside a (by all appearances) entirely deserted cave in a remote and desolate karst mountain area.

Feng’ai Dong’s orientation is roughly east-west. Its maximum internal width is about 125 metres, while the internal area is about 7,500 square metres. The cave-entrance and the deepest place inside the cave are, respectively, 1,250 metres and 1,130 metres above sea-level. The cave has three sections, upper, middle, and lower. The middle section directly faces the cave-entrance, and receives bright sunlight for a short time each day (about one hour in winter, and at most two hours or so in summer). This, therefore, is the best section, and the one in which most houses have been built. As one follows the slope downwards, the houses in the most built-on area form four rows. The upper and lower sections do not receive direct sunlight, and are relatively dark; thus fewer houses have been built there.

How are the people of Feng’ai Dong affected by living in a cave? They themselves...
recognize both advantages and disadvantages. A first advantage is that house-building is cheaper and requires less work. To build a house outside the cave costs at least ¥6,000 to ¥7,000, while the expense can go as high as ¥10,000 to ¥20,000. Building a house inside the cave costs only ¥2,000 to ¥3,000, which is a considerable saving. Second, the cave is at least relatively warm in winter as well as cool in summer. Third, there is no need to fear storms, while stores of firewood can be kept dry over the rainy season. Inside the cave one travels on dry ground, so that going out of doors presents no problems. Fourth, building homes inside the cave saves land on the outside. Fifth, the concentration of the houses into a small area is convenient from the point of view of residents’ everyday comings and goings in the neighbourhood. When the door is open, one is inside an enclosed village; when it is closed, one is simply at home.

Of course, the disadvantages are evident as well. For example, not only is there little daylight in the cave, but ventilation is inadequate, the cave is dark and chill, and the air is rather foul, which makes it unhealthy for both human beings and domestic animals. According to an elderly resident, in the 1950s there were only thirteen households in the cave, there was plenty of living space, and hygiene was good. Now, however, with fifty-six households crowded together, housing conditions have naturally deteriorated greatly.

Excessive population growth has also led to severe water shortage. Feng’ai Dong’s water supply comes from two sources. One is the surface water that percolates into the cave; the other is rainwater accumulated in man-made wells and reservoirs outside the cave. The first kind of water is collected in a most unusual way. A great many of the families have set up bamboo pipes, some tens of metres long, leading upwards from their houses; at the top end of the pipes are funnels made of bamboo splints and bark. The funnels are placed underneath the dripping stalactites hanging from the cave roof. The drops of water are collected in the funnels and then pass through the bamboo pipes (whose septa have been cut through) straight into the water-storage vats of the houses below. This thoroughly ingenious method of collecting water has the additional function of preventing the drips from soaking into the houses’ roofs. A similar technique is involved where wells are dug in parts of the cave in which percolated surface water is relatively abundant. In the north-eastern corner of the cave are distributed some tens of wells of various sizes, shapes, and depths. The sides of the wells are made of pounded clay. Again, funnels and bamboo aqueducts are used to lead the water into the wells. The aqueducts in the well area run criss-crossed, some being as much as forty or fifty metres long.

The water which has percolated through the rock of the cave-roof is drinking water of the highest quality, for it is cool, clear, and palatable. However, because the flow is limited, it cannot meet all the needs of the people and animals living in the cave. This being the case, wells have been built outside the cave, in two places some distance away where there is clay. The rainwater accumulated in these wells is used to supplement the percolated water. In addition, in the late 1950s, embankments were raised and a fairly large reservoir built at a place called Shuijing Wan (Well River-bend). Even so, with the population growing and the forest cover rate declining sharply, the problem of inadequate water supply has worsened daily. By the 1970s and 1980s, all the water stored both inside and outside the cave sufficed for only seven or eight months of the year. From February until May, with the outside wells dry and the inside stores of percolated water exhausted, the people of Feng’ai Dong had no choice but to get up each morning hours before dawn to go to Dongbao Xiang, more than fifteen kilometres away across the mountains, in order to fetch water. They brought the water on their backs or using shoulder carrying-poles. The bitter hardship of their lives at that time would be hard for most people to imagine.

In 1990–91, in order to alleviate the burden of acquiring water, the government assisted the villagers of Feng’ai Dong in building a large reservoir, capable of holding more than 1,000 cubic metres of rainwater, by the mouth of the cave. This basically solved the water supply problem of the cave’s human and animal residents, allowing the human residents to sleep more soundly. However, the reservoir water, being rainwater washed down from the surrounding hillside, contains a substantial admixture of mud and sand, and is thus anything but pure. Drinking such water is evidently bad for human health.

Excessive population growth has not only led to difficulties over drinking water, but has also created a severe land shortage. The natural environment has also undergone extreme degradation. Feng’ai Dong’s agricultural land is for the most part distributed over the valley in front of the cave. The valley is basically oval, and the floor of the basin, 1,109 metres above sea-level, is the only piece of level ground belonging to the village. Irregularly distributed over the area surrounding the basin floor, up to a height of 1,150 metres above sea-level, there are some discontinuous tablelands. Above the tablelands is the domain of stone. Rocks are strewn wildly all over the land, and soil exists only in the crevices between the rocks and in depressions in the rocks themselves. Yet even such inferior land is
Feng’ai Dong are already undergoing major hardship in the karst region. As explained above, the people of Feng’ai Dong have a history of erosion, a problem which is especially serious in a karst environment. The loss of forests is liable to accelerate land clearance, and the forests have all but disappeared. Between 1950 till the present day, the environment has been transformed completely, and the forests have all but disappeared. The above should have sufficed to give the reader some insight into peasant life in a karst mountain region of south-east Yunnan. In contemporary China, and indeed the contemporary world, there are very few people still living in caves; from this point of view, the case of Feng’ai Dong would seem to be devoid of representative significance. However, the case of Feng’ai Dong is fully typical in that it provides a conspicuous example of the sorry plight into which human beings can be led by the blind development of population, carried out without regard for the necessary harmonious co-existence between man and environment, and resulting in severe damage both to the environment and to natural resources. In any case, the very fact that in this, the closing decade of the twentieth century, there is a village living a hard life in a cave for environmental reasons deserves deep reflection on our part.

NOTE

1. The nearest Western equivalent to a Chinese “dry” parent would be a purely secular godparent. Trans.
The Political Ecology of Forest Conservation in Xishuangbanna
(II) The View from an Upland Dai Village

Elisabeth Grinspoon

Department of Environmental Science, Policy, and Management
University of California at Berkeley

The first part of this article (see CEHN 3, no. 1) presented the case of “Mengguo,” a lowland Dai village, and addressed the management of the Xishuangbanna Nature Reserve, established by the state to protect Yunnan’s declining rain forests. The second part of the article examines the reserve’s effects on the lives of the local Dai minority people and natural ecosystem in “Mannan,” an upland Dai village sharing boundaries with a nature reserve and a state-run forestry farm. Comparing these two Dai villages uncovers a process of negotiation between reserve managers and village leaders that enables local farmers to use the reserve land for their economic benefit in both traditional and non-traditional ways.

Mannan Village

“Mannan” (a pseudonym) is a riverine village with a population of nearly 300 people in about 60 households; it has nearly 10,000 mu of mountain land. From a high peak near the outskirts of the village, one can see the muddy waters of the Lancang River, a tributary of the Mekong, meandering across the landscape. The river separates the village land from the Xishuangbanna Nature Reserve. On the western bank, fuel wood forests and fruit orchards cover the village land. Wooden houses on stilts, characteristic of Dai settlements, stand in a cluster not far from the river’s edge. Covering the hill beyond the houses are the villagers’ private plots of rubber trees and shifting-cultivation land that has been allocated as private plots. For decades, the villagers have been using different portions of their cultivated land in rotation, so that each parcel of land periodically lay fallow. Since the early 1980s, however, the villagers have been transforming more of the shifting-cultivation land into rubber tree plantations, putting more pressure on the remaining shifting-cultivation land.

Villagers say that they learned about planting rubber trees by observing the workers at the neighboring state forestry farm. The farm is behind the villagers’ private plots, and its uniformly-spaced rows of more mature rubber trees stretch as far as the eye can see. State forestry-farm workers began planting these trees in 1969. The farm covers tens of thousands of hectares in the county and employs over 2,000 long-term Han Chinese workers from the country’s inland provinces. Although Mannan’s villagers credit the farm with bringing them improvements in the local infrastructure — a dirt road, a hospital, a middle school, and electricity — their sentiments toward it are generally negative. The villagers complain that the state took two-thirds of their village land when it established the farm, and that new conflicts with the farm continue to arise. Villagers say that the farm’s workers plant rubber trees so close to their paddy land that the trees shade the paddies, decreasing rice yields. They also point out that forestry-farm workers let their chickens into the village paddies to feed on the growing rice.

Why do Mannan’s villagers have more conflicts with the forestry farm than with the nature reserve? On the one hand, Beijing manages the forestry farm from the top down. Distant state-level bureaucrats are responsible for the forestry farm, and the farm managers, whose hometowns are far away from Xishuangbanna, lack the incentives and mechanisms to address the villagers’ complaints. On the other hand, the local-level officials of the reserve management system have both the power and the incentive to negotiate with village leaders. Village leaders and reserve managers are part of the same scheme of social and economic relations and have a common interest in solving problems. The villagers do not fear local officials when going into the nature reserve, despite clauses in the national regulations banning such activities. According to the regulations, “it is prohibited to carry out such activities as cutting, grazing, hunting, fishing, and gathering medicinal herbs. . .” in nature reserves. The township reserve management officials, like the villagers, seem to pay little attention to the regulations. Local officials even complain that the regulations are too impracticable to implement.

Mannan’s villagers go into the nature reserve on a daily basis, crossing the river in long dugout canoes made from tropical hardwood trees that may have been harvested before the reserve was established. Villagers also lead their water buffalo across the river to a large plot of reserve land that they burn annually to promote the growth of grass for grazing. They were burning this land annually long before the reserve was created. They are also undeterred by the natural walls surrounding the reserve’s forests. These thick, green walls form as a result of the abundance of light in the disturbed edge areas of the forest. The light allows lianes, epiphytes, and climbing palms to grow everywhere, from the
ground to the branches of the canopy trees, making entry into the forest difficult. In spite of the natural walls, villagers regularly venture deep into the forest to hunt, fish, gather wild vegetables, and grow medicinal herbs such as Amomum villosum.

During 1995, village cadres were planting rubber trees on the reserve land near the bank of the river. Village cadres gained use of these plots while representing their village in negotiations with reserve managers. The cadres conduct these negotiations in the name of the village’s economic development. Because reserve management officials have an economic stake in the prosperity of the township, they usually permit villagers to use the land. The use-rights, however, officially remain those of the reserve management. The village cadres are responsible for dividing the land among the villagers. Cadres may take the biggest plots or even the whole tract of land in question for themselves and their relations.

Village leaders also recently negotiated successfully for permission to build a reservoir in the reserve. The national regulations governing nature reserves are filled with loopholes. For example, the national regulations contain strongly worded statements prohibiting construction projects inside the reserves. At the same time, the regulations permit construction projects “under special circumstances.” The reservoir will irrigate paddy land that lies inside the reserve; this land was opened by the villagers’ ancestors when the village was located on the western side of the Lancang River. Although the village moved to its present site over seventy years ago, the villagers have continued to use that paddy land over the decades. Building the reservoir will supply the water needed for higher yields on it. With higher yields, Mannan’s village leader explains, farmers will no longer need to plant upland rice, a highly labor-intensive activity. The shifting-cultivation land that is now used for upland rice could then be used for rubber tree plantations to develop the cash economy. The county and provincial governments decided to approve this plan on the grounds that it would aid the village’s economic development; their decision had little connection with the villagers’ historic claim to the land and more to do with their aim to promote local economic development.

The Xishuangbanna Nature Reserve Management Bureau

Because economic development is given the highest priority in post-Mao China, regulations are structured to allow government agencies at all levels to promote it. Most of the regulations regarding the management of reserves have been written during the Deng era of market reforms and government decentralization. The 1994 regulations highlight the importance of regional economic development. “In determining the range and boundaries of a nature reserve, the relevant department should give consideration to the integrity of the protected landscape, as well as the needs of local economic construction, the production activities, and the everyday lives of the local residents.” Thus, the local government has discretionary powers to alter the boundaries of the nature reserve according to the local situation.

In Xishuangbanna, prefectural nature reserve management officials see short-term economic development as a necessary goal. “The villages must develop, and we need to support their efforts because we rely on the villagers,” explains Cao Mengliang, the Director of the Xishuangbanna Nature Reserve. “In China, the right to produce is the most important human right; if we do not support the productive efforts of the villagers, then they will become poorer and more destructive to the reserve’s forests. As a prerequisite for conservation we must develop economically. If this area does not develop, we cannot protect the forests.” He reasons that the reserve management must promote good relations with the villagers, or else they will not prevent outsiders from doing damage to the forests. “We must first make sure that the villagers’ economic needs are satisfied because we cannot build a protective wall around the reserve,” he says. According to Cao, some of the farmers’ activities in the reserve aid long-term economic development. He says that the villagers use the money from the sale of medicinal herbs to buy rubber tree saplings. These saplings represent a long-term investment that will produce more income for the villagers. This process of development, however, also leads to long-term ecological destruction as large-scale rubber plantations further exacerbate the loss of biodiversity and problems of soil erosion.

Cao Mengliang emphasizes the importance of developing local economies primarily because it is crucial for the survival of the reserve management bureau itself. According to the national regulations on nature reserves: “The funds necessary for the management of nature reserves shall be arranged by the people’s government above the county level of the region where the nature reserve is located.” In the case of Xishuangbanna, the people’s government above the county level is the prefectural government in Jinghong. The prefectural government is under increasing pressure to become self-sufficient and to pay off debts as a result of the fiscal decentralization.

Because of the devolution of fiscal responsibility to local-level governments, the prefectural government has asked nature reserve management units to produce at least enough revenue to support themselves. This has led the reserve management units to encourage workers to pursue
entrepreneurial activities that have little to do with the public mission of the unit and may even run counter to it. The Xishuangbanna Nature Reserve Management Bureau, for example, has plans to open restaurants and promote tourism in order to help support four reserve management offices that operate at the county level, six management stations at the township level, and eighty foresters at the administrative village level.

**Conclusion**

China established and designed its reserve system to address the dual goals of nature conservation and economic development. The central government deliberately designed the nature reserve management system to preserve the natural resources within the reserves on one hand, and, on the other, to allow profit-making activities and promote entrepreneurial activities at the local level. Fiscal decentralization has forced local governments and local work units to become self-sufficient, and, thus, profit-making has become one of the primary goals of the work units in the reserve management hierarchy. In this sense, China’s nature reserves are a model for demonstrating the effects of market intrusion in reserve management.

The effects of the market (that is, the effects of these profit-making activities and of peasant response to the demand for rubber) reaching into reserve management at the local level are both positive and negative. The managers are willing to honor the villagers’ historic claims to land in the reserve because the villagers use the land in an economically productive manner. In this way, they aid local economic development, which benefits all members of the local community, especially local officials. Local officials are rewarded through bonuses and promotions for successfully fostering economic development.

While the local-level Xishuangbanna Nature Reserve managers understand the necessity of making compromises between economic development and nature conservation, the Chinese state does not acknowledge this trade-off. Instead, the state-run newspapers blame greedy rural producers for the decline of forest resources in the reserve. Already in 1986, China’s official English-language daily newspaper noted, “The People’s Daily blamed the crisis [in the Xishuangbanna Nature Reserve] on rural producers’ ill-considered approach to [sic] making a quick profit at the expense of rural resources and the ignorance of local officials on the importance of protecting flora and fauna for ecological purposes” (*China Daily*, 1986). Here, the central government blames rural producers’ profit-making efforts for the failure of the reserve’s policies aimed at conservation. In this, the state misdirects its reprehension. The problem in the Xishuangbanna Nature Reserve is rooted in government mandates requiring the Ministry of Forestry, which administers reserves at the provincial level, to maximize profits.4

The conservation policies implemented within the context of economic reform have both positive and negative effects on the local Dai people and on the natural resources in the reserve. On the positive side, these policies allow for negotiations and compromises that give the village leaders a vested interest in protecting the reserve’s resources. On the negative side, these policies increase human impact on the forest. The result is a nature reserve that may not be as biologically sustainable as the international community might like, but may be more culturally and economically sustainable than reserves in some Southeast Asian nations.

**NOTES**


3. Ibid.


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**The China Geographical Information System Project: An Update**

**Lawrence W. Crissman**

**Griffith University**

The May 1995 issue of this newsletter (CEHN 2, no. 1) contained a description of the Spatial Information Infrastructure for Asian Studies in Australia (SIIASA) Project, which has been conducted by the Australian Centre of the Asian Spatial Information and Analysis Network (ACASIAN) since 1992. The China Geographical Information System Project (China GIS Project), initially established in 1989 in the Faculty of Asian and International Studies, Griffith University, has been the major beneficiary of...
SIIASA resources. As elaborate spatial databases for the PRC have now been produced or are in the final stages of completion, it is timely to provide an update on what has been achieved.

Not everyone in the field of China studies may immediately appreciate the revolutionary significance of Geographical Information Systems (GIS) technology for social science research generally, or the particular value which the China GIS Project spatial databases have for a wide variety of research on historical as well as contemporary China. A GIS containing relevant information is especially suited to research on environmental issues because of the way in which it permits information on spatially distributed variables to be stored, analysed, and displayed. China’s environmental history is no exception.

Essentially, establishing a GIS involves digitising mapped information to create objects in a spatial database which are associated with attribute variables that can therefore remain disaggregated and analysable in terms of their geographic distributions or co-variance with other spatially distributed data sets. To translate that techno-babble, suitably computerised map information can be linked to information of various kinds, permitting investigation of the geographical distributions or spatial contexts of the variables. As a result of such analyses, spatial patterns can be identified, and it may also be possible to understand the causes of the distributions.

For example, a vectorised (geometrically digitised) map of China’s county-level (xian and equivalent shi) boundaries can display census data as choropleths (maps depicting spatially distributed variation with different colors, hues, or intensities), such as the ones contained in the Population Atlas of China (Hong Kong: Oxford University Press, 1987). GIS-based analysis can be far more sophisticated, both geometrically and statistically, than such pretty maps might suggest, but they do represent one kind of simple output that can be almost effortlessly generated from a suitable GIS. The elaborate spatial databases produced for the China GIS Project make possible analyses of many aspects of the spatial organisation of China’s society, economy, and environment that would simply not be feasible in the absence of such research infrastructure.

The most significant proportion of the spatial data for China produced by ACASIAN for SIIASA and the China GIS Project was vectorised from the 1:1,000,000 Land-use Map of China atlas (Beijing: Science Press, 1990) under a copyright agreement with the Institute of Geography of the Chinese Academy of Sciences and the Science Press. At present, the agreement limits distribution of the Land-use Map of China (LUMC) databases to Australia and China and allows their use for academic research and governmental purposes only. However, negotiations are under way concerning making access to the data for academic and commercial use more widely available, particularly for collaborative research projects.

In addition to representations of over fifty land-use or land-cover categories in some 165,000 polygons down to four square kilometres in area (largely based on areal photography and ground surveys done in the early 1980s), the LUMC Spatial Data Bases contain all the elaborate hydrological and other information contained on the published maps. However, the administrative boundaries shown on the LUMC are not complete or up-to-date, and have therefore been supplemented with information from a wide variety of other sources to produce a spatio-temporal administrative database that can generate the correct administrative units for the whole PRC for any date between 1980 and 1996. This allows statistics pertaining to any point in time between those dates to be accurately geo-referenced and simultaneously analysed both spatially and diachronically. Basic variables from the 1982 and 1990 census returns are in the attribute databases, as are a variety of agricultural statistics (obtained from collaborative or public-domain sources) for the 1980s and 1990s. As funding permits, the temporal coverage of the administrative database will be taken back to at least 1949.

Before his untimely death earlier this year (1996), Professor Robert Hartwell (recently retired from the University of Pennsylvania) had used ACASIAN boundary data for 1991 to produce co-located county coding for historical counties going back to the Tang dynasty, and on that basis had created administrative maps for A.D. 741, 1080, 1200, 1290, and 1391. He had plans to prepare similar maps for 1541, 1820, 1910, 1914, 1930, and 1948 as well, which he would have achieved if he had lived a few months longer. ACASIAN would like to hear from anyone with an interest in the historical administrative geography of China who would like to contribute to finishing that aspect of Hartwell’s life-work.

ACASIAN has purchased rights to digitise the Atlas of Chinese Postal Codes (Harbin: Harbin Cartographic Publishing House, 1988). On that basis, it has produced commercial MapInfo products containing 1992 administrative boundaries and capitals and all 12,000 officially-designated zhen contained in the 1990 census. The maps in The Language Atlas of China (Hong Kong: Longman Group, 1987) have also been vectorised for the China GIS Project, as have some Russian ethno-linguistic materials.

In addition to the spatial data for China created at ACASIAN, SIIASA has obtained other
valuable databases for the China GIS Project. They include recent (early 1990s) 1:1,000,000 land-cover polygons produced by the Institute of Remote Sensing Applications in Beijing from satellite images. Digital Elevation Model data on a one-kilometre grid were obtained from the EROS (Earth Resources Observation System) Data Center in Sioux Falls, and can be used to produce contour lines for any desired set of elevations. Digital Chart of the World data for China have also been translated into MapInfo format.

ACASIAN has also produced contemporary administrative boundary databases for the entire former Soviet Union as well as most countries in East, Southeast, and South Asia, plus Iran and Turkey. Further information on the China GIS Project and other aspects of spatial data work conducted at ACASIAN can be found on the following World Wide Web site:

http://www.asian.gu.edu.au

The Director of ACASIAN may be contacted at the following addresses:
Prof. Lawrence W. Crissman
Australian Centre of the Asian Spatial Information and Analysis Network (ACASIAN)
Faculty of Asian and International Studies
Griffith University
Nathan (Brisbane) QLD 4111
Australia
E-mail: Crissman@ASIAN.gu.edu.au

Teaching Ideas and Experience

Course Syllabus: Science, Technology, and Medicine in China

Hugh L. Shapiro

University of Nevada, Reno

This course aims to introduce students to the thinking behind the science, technology, and medicine of classical and imperial China. Structuring the course around the notion of Tian-Di-Ren/Heaven-Earth-Human was intended to familiarize participants with the idea of correlations dating from the late classical period, and to introduce a concept that structured the mapping of sanctioned knowledge during the imperial era.

Having taught the course once, I reversed the order of presentation into Human-Earth-Heaven, for two reasons. First, the Tian/Heaven section raises the general idea of science in China, how people have thought about it, and what lateral issues seem to be at stake. Beginning with an issue that has generated so much contrary discourse only served, in some cases, to reinforce preconceived ideas about the problem. To avoid this tendency, “Heaven” has been moved to the end of the course. Second, students took quickly to the medical themes examined in Ren/Human. Many stated that they would have preferred treating the “human” themes earlier so as to have time for developing related projects.

The Di/Earth section, too, proved productive, due to an approach borrowed from Harold Kahn: using slides made from the woodblock prints reproduced in Sung Ying-hsing’s T’ien-kung k’ai-wu for student presentations. Success owed much also to the quality of the readings, such as the volume by Robin D.S. Yates and Joseph Needham, Science and Civilisation in China, vol. 5, Chemistry and Chemical Technology, part 6, Military Technology: Missiles andSieges.

Texts were selected from a variety of disciplines to suggest the breadth and richness of the field, and the quality of research being done on these problems. Most students enrolled in the course had completed a two-semester introductory course on Chinese history. Regular student presentations, permitted by the seminar format, played a critical role in students’ absorption of the material. Presentations involved the following: the analysis of a particular essay or theme, a debate, a slide presentation, or the explication of an artifact I provided or of an image reproduced from such works as Gilman’s Seeing the Insane, Hommel’s China at Work, and Needham’s Science and Civilisation in China.

I thank Lisa Ann Raphals for generously sharing her syllabus on Chinese science, and Shigeisaka Kuriyama, Judith Farquhar and Helen Dunstan for conceptual and bibliographical help.

Topics

1. Human (Ren)
   Conceptualizing the Body
   Medicine
   Gendered Medicine
   Physiological Alchemy
   Madness
   Self-mutilation and Suicide
   Forensic Medicine

2. Earth (Di)
   Engineering
   Farming and Sericulture
   Warfare
3. Heaven (Tian)
Time
Astronomy
Music
Conceptions of Nature
Problematicizing Science in China

Readings and Reference

Abbreviations
AB Art Bulletin (College Art Association of America)
AHR American Historical Review
BMFEA Bulletin of the Museum of Far Eastern Antiquities
CMJ Chinese Medical Journal
CS Chinese Science
CMJ Chinese Medical Journal
CS Chinese Science
HJAS Harvard Journal of Asiatic Studies
HR History of Religion
JAOS Journal of Asian Studies
JHMAS Journal of the History of Medicine and Allied Sciences
LIC Late Imperial China
MC Modern China
MAQ Medical Anthropology Quarterly

1. HUMAN (REN)

Week 1: Conceptualizing the Body


Reference


Week 2: Medicine

Reference
The Yellow Emperor’s Classic of Medicine (Huangdi neijing) consists of two separate compilations, the Suwen (Basic Questions) and the Lingshu (Celestial Pivot). These collections draw together the work of many authors and comprise the most influential writings of traditional Chinese medicine. The Huangdi neijing was compiled between the first century B.C. and the early first century A.D.

Week 3: Gendered Medicine

Reference

Week 4: Physiological Alchemy


Reference

- On qi (ch‘i):
  - Benjamin I. Schwartz, The World of Thought in Ancient China (Cambridge, Mass.: Harvard University Press, 1985), 179-84 and 269–75; for further references, see index.
  - A.C. Graham, Disputers of the Tao: Philosophical Argument in Ancient China (La Salle, Illinois: Open Court, 1989), 101–104 and 352–54; for further references, see index.

- On alchemy:

Week 5: Madness


Reference

Week 6: Self-mutilation and Suicide

Self-mutilation


Suicide


Reference

Dianshi zhai huabao, Shanghai, 1884-89; reprint, Guangzhou: Guangdong Renmin chubanshe, 1983.


Week 7: Forensic Medicine


Reference


2. EARTH (DI)

Week 8: Engineering


Reference

Week 9: Farming and Sericulture
Farming

Reference
F.H. King, Farmers of Forty Centuries. Madison: Mrs. F.H. King, 1911.

Sericulture
Sung Ying-hsing, T’ien-kung k’ai-wu, 35–72.

Week 10: Warfare
Farming

Reference
F.H. King, Farmers of Forty Centuries. Madison: Mrs. F.H. King, 1911.

Sericulture
Sung Ying-hsing, T’ien-kung k’ai-wu, 35–72.

Week 10: Warfare

Reference
F.H. King, Farmers of Forty Centuries. Madison: Mrs. F.H. King, 1911.

Sericulture
Sung Ying-hsing, T’ien-kung k’ai-wu, 35–72.
3. HEAVEN (TIAN)

Week 11: Time

Reference

Week 12: Astronomy

Reference
Ho Peng Yoke, “Chinese Astronomy,” in his Li, Qi, and Shu, 114–69.

Week 13: Music

Reference


Week 14: Conceptions of Nature

Reference

Week 15: Problematizing Science in China

Reference
Qiu Renzong, “Cultural and Intellectual Attitudes That Prevented the Spontaneous Emergence of Modern Science in China,” in Fraser, Lawrence, and Haber, eds., *Time, Science, and Society*, 181–84.

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Changes of address/corrections
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Richard Corlett
Department of Ecology and Biodiversity
University of Hong Kong
Pokfulam Road
Hong Kong
Elisabeth Grinspoon  
Division of Resources, Institutions, Policy and Management  
Department of Environmental Sciences, Policy and Management  
Mulford Hall  
University of California at Berkeley  
Berkeley CA 94720  
U.S.A.  
E-mail: lis@nature.Berkeley.EDU

T. J. Hinrichs  
E-mail: tjhinric@fas.harvard.edu

David L. Keenan  
E-mail: dlkeenan@indiana.edu

Cathy Mabry  
Department of Botany  
Bessey Hall  
Iowa State University  
Ames IA 50011  
U.S.A.  
E-mail: mabry@iastate.edu

Peter J. Matthews  
National Museum of Ethnology  
Osaka 565  
Japan  
E-mail: pjm@idc.minpaku.ac.jp  
Tel: 81-(6)-876-2151  
Fax: 81-(6)-878-7503

Wang Jiange  
Institute of Chinese Historical Geography  
Fudan University  
Shanghai  
China 200433  
Environmental change in North China.

New subscribers

Dirk Betke  
Department of Environment and Society  
Institute for Management in Environmental Planning  
Technical University Berlin  
Sekr. FR 2-7  
Franklinstrasse 28/29  
D-10587 Berlin  
Germany  
E-mail: betke@berlin.snafu.de  
Tel. and fax: 49-30-2155475  
Historical development of Chinese institutions related to the using of natural resources and the protection of the environment; political, social, and cultural aspects of the man-nature relationship in socialist China; environment and development in contemporary China. Has field research experience in Xinjiang.

Anna Brettell  
3433 Stanford St.  
Hyattsville MD 20783  
U.S.A.  
E-mail: v-abrettell@bss2.umd.edu  
Tel: 301-422-8563  
Global and regional cooperation; the role of science in environmental decision-making; China’s participation in international environmental conventions; environmental education in China; the “environmental movement” in China; and environmental security in Asia.

H. D. Min-hsi Chan  
Department of History  
University of Newcastle  
Callaghan  
New South Wales 2308  
Australia  
E-mail: hichan@cc.newcastle.edu.au  
Tel: 61-49-215218 or 215221  
Fax: 61-49-216940

Jonathan Schwartz  
Department of Political Science  
University of Toronto  
Sidney Smith Hall  
100 St. George Street  
Toronto  
Ontario M5S 1A1  
Canada  
E-mail: jschwart@chass.utoronto.ca  
China’s state capacity, as reflected in the ability of provincial-level governments to enforce environmental regulations.

Wang Peihua  
Department of History  
Beijing Normal University  
Beijing  
China 100875  
Tel: Beijing 6220-9506  
Chinese history from Song to Qing inclusive.

M. William Wykoff  
E-mail: mww7@cornell.edu  
Reflections of the onset of the “Little Ice Age” in Chinese documents and proxy records.
Xie Jialu
Scien-Tech Information Institute
Chinese Academy of Forestry
Wan Shou Shan
Beijing
China 100091
History of forest legislation in China.

Zhang Jiayan
E-mail: JZHANG@rullet.LeidenUniv.nl
Chinese agricultural and environmental history.

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BRITAIN:
Dr. Kegang Wu
Department of Geography
University of Liverpool
Roxby Building
P.O. Box 147
Liverpool L69 3BX
Tel. 0151-794-2835
Subscription: £5.00 p.a.
Make cheque payable to K. Wu

TAIWAN:
Prof. Wang Hurng-Jyuhn
Institute of Natural Resources
National Dong Hwa University
Hualien
Taiwan R.O.C.
E-mail: hjwang@cc.ndhu.edu.tw
Tel. 038-662500, ext. 175
Subscription: NT$ 200 p.a.

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