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HIMALAYAN
RESEARCH
BULLETIN
THE HIMALAYAN RESEARCH BULLETIN

The Himalayan Research Bulletin is published by the Nepal Studies Association at the South Asia Program, Cornell University, Ithaca, New York 14853 USA.

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Membership and Subscription Information

The Himalayan Research Bulletin publishes current news and information of scholarly and research interest in all fields relevant to the Himalayan areas of Asia. The Bulletin is published three times a year and a subscription is included in the membership dues of the Nepal Studies Association. Membership is $5.00 (U.S.) for individuals and $10.00 (U.S.) for institutions. Remit dues for membership and subscription to:

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The editors encourage the submission of materials for publication: news on recent publications, short articles, reviews, news and information of interest to Himalayan specialists, conference reports, research grants, abstracts of research proposals and research results, dissertation abstracts, bibliographies, etc. Send to:

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VIII. Membership Information
LE'ITER FROM THE NEW EDITORS

Donald Messerschmidt, who has diligently put out this Bulletin single-handedly and in less than ideal circumstances since 1975, is planning on engaging in development activities in Nepal over the next few years and will no longer be able to edit the Bulletin. We wish to convey our gratitude to him for this service to the association, a feeling shared, we are sure, by the membership at large. This issue is as well largely the result of his efforts. We have agreed to edit the Bulletin for the next two years and hope that all of you who have been regular contributors to the Bulletin under Donald Messerschmidt's tenure will continue to submit materials for publication regularly.

We plan on retaining the contents of the Bulletin as they have been in the past. We are, however, contemplating changes and encourage your suggestions. We see the Bulletin as having two primary foci: first, as a source of current information of interest to the membership, and second, as a substantive review of scholarship, research, and other work in the Himalayan area of Asia. With this in mind, we are considering, within the present practice of publishing three issues a year, to devote two issues, one in the Fall and one in the Spring, to news of the association, current news on relevant activities, notes on research, information on conferences, news of publications, and other timely information on activities and interests of the membership; the third issue each year would concentrate on more substantive reviews, articles, abstract and reports. We welcome your views on these editorial proposals. Any changes to the Bulletin, though, are of course subject to our limited budget.

We are also trying to put our membership and subscription lists in order and have enclosed a brief questionnaire in this issue asking for updated addresses and brief descriptions of key interests and activities in reference to Nepal and other Himalayan regions. We plan on publishing a complete listing of the membership in the Fall issue of the Bulletin. We also are encouraging you, in the context of the expanding field of Himalayan studies, to inform your colleagues and associates, who may not be members, of our existence.

The Bulletin will be published for the next two years out of the South Asia Program at Cornell University. We thank the South Asia Program and Cornell University for their institutional, financial, and clerical support in the publication of the Bulletin.

Please send your contributions, notices, suggestions, complaints, or what-have-you to:

Kathryn March or David Holmberg
Himalayan Research Bulletin
South Asia Program
Uris Hall
Cornell University
Ithaca, New York 14853 USA

We look forward to hearing from you.

The Editors
II. LETTER FROM THE PRESIDENT

Re-organization of the Nepal Studies Association has begun and I am pleased to announce that Professor Dor Bahadur Bista, Executive Director of the Research Centre for Nepal and Asian Studies at Tribhuvan University, Kirtipur, Nepal, has accepted the position of Honorary Director. Professor Bista has given advice and guidance to so many scholars from Nepal and abroad over the past years while being a noted scholar himself; we are very fortunate to have him associated with us in this new role.

As we look toward enlarging our membership while providing increased communication within it, we ask for suggestions toward holding a conference of the association in late 1981 or early 1982. We welcome proposals as to where the meeting should be held as well as preliminary titles of papers that might be presented. The subjects will have a very broad range within pan-Himalaya studies as they deal with subjects in the sciences as well as the humanities. The conference would last two or three days, presumably.

Please send your suggestions to me at:

Department of Fine Arts  
Campus Box 318  
University of Colorado  
Boulder, CO 80309 USA

Along with making plans for a meeting, we are engaged in redefining the purposes and scope of the association’s publication, newly entitled the Himalayan Research Bulletin. We call for news of your activities and any events, publications, grants or other sources of support, and scholars related to our field. Our editors invite articles in another section of this bulletin, and I hope that you will cooperate fully with them as they continue to work very hard to keep us informed. And it is important to remember that yearly dues are being collected now.

My best regards to you in this important time of NSA growth.

Sincerely yours,

Ronald M. Bernier
III. NEWS

*Professor Bista to be Honorary Director of the Nepal Studies Association

The Nepal Studies Association is pleased to announce that Professor Dor Bahadur Bista, Executive Director of the Research Centre for Nepal and Asian Studies, Tribhuvan University, Kirtipur, Nepal, has accepted the Honorary Directorship of the Association. Professor Bista, through his scholarly contributions and in his numerous official positions, has encouraged, over the last decades, the development of Nepal Studies and Himalayan Studies in all their aspects. All of us who have had association with Professor Bista, whether through his writings or in other capacities, are honored to have someone so distinguished to serve in this position.

*Nepal Studies Association Plans Meetings in Madison, Wisconsin

The Nepal Studies Association is planning on holding a meeting in conjunction with the Tenth Annual Conference on South Asia to be held on the campus of the University of Wisconsin, Madison, Wisconsin from November 6 through November 8, 1981. More detailed information on the events will be announced in the Fall issue of the HRB. Mark your calendars.

*Newar Studies

Robert Levy (University of California, San Diego) and Niels Gutschow (University of Kiel, West Germany) are anxious to hear from all scholars and students who have been working in, or plan to work in, Newar Studies as soon as possible. They are in the preliminary stages of planning a conference and subsequent publication surveying all aspects of research on Newars. Interested people should write, describing their work, publications, plans and projects, to:

Robert Levy  
Department of Anthropology  
University of California - San Diego  
La Jolla, CA 92093

*"Pilgrimage: The Human Quest" — An Interdisciplinary Conference

An interdisciplinary conference, organized by E. A. Morinis (Anthropology, Simon Fraser University, British Columbia), on pilgrimage and tourism took place from May 14-17, 1981 at the University of Pittsburgh. Eighty participants brought their research findings to this highly successful conference, the first of its kind in North America. Scholars from a number of disciplines reported on pilgrimage and tourism in a wide variety of societies and over a range of religious traditions. They came from England, Japan, India, Italy, and Mexico, as well as the U.S. and Canada. The area from which most papers were derived was South Asia, with eight contributors participating in the session "North India and the Himalayan States," chaired by Robert Stoddard (Geography, University of Nebraska).

Of the seven keynote talks, four were by South Asianists, with Barbara Aziz (Southern Asian Institute, Columbia University, New York) delivering a paper on "The pilgrims'
view: psycho-social dimensions of the sacred journey." Don Messerschmidt also delivered one on the "Himalayan pilgrimage to the Hindu shrine at Muktinath." It is expected that the proceedings of this conference will be published within two years.

It is clear from the success of this conference that pilgrimage is now an established area of research: related issues are attracting increasing numbers of scholars and Himalayan studies will certainly enjoy its share of this growth.

*Visiting Scholar: Kamal P. Malla at Berkeley

Kamal P. Malla has just completed four months as a Research Associate in the Department of Linguistics at the University of California, Berkeley, under the Council for International Exchange of Scholars. By all reports, Dr. Malla's stay at Berkeley was extremely productive. According to colleagues there, he participated fully in the intellectual life of the linguistics department and contributed greatly to the interchange of ideas among faculty and students alike, especially through his weekly seminars on the grammar of Newari.

During his stay, Dr. Malla worked on a general reference grammar of Newari, an outline and short version of which he completed while at Berkeley. This 150-page monograph was reproduced and circulated to interested scholars throughout the U.S. It is a very interesting piece of work and constitutes the most thorough and sophisticated treatment of Newari grammar thus far available in English. We can only hope that he will be able to complete the full study soon.

In the past Dr. Malla was the Rector of Tribhuvan University. Since leaving Berkeley, he has again returned to Tribhuvan, this time to join the faculty there.

*Dalai Lama to offer Kalachakra Initiation and to Deliver Lecture Series

His Holiness Tenzin Gyatso, the 14th Dalai Lama, will offer the Kalachakra Initiation in Madison, Wisconsin from July 10th to 21st, 1981. In conjunction with the initiation, the Departments of South Asian and East Asian Studies together with the Southeast Asia Committee of the University of Wisconsin, Madison will be sponsoring a series of five cultural exchange lectures by the Dalai Lama. For further information write or phone:

Deer Park
Box 5366
Madison, WI 53705 USA
Telephone 608-233-0999

*Sierra Club Solicits Documentation on Arid and Tropical Ecology

Kathy Sheppard, information officer of the Sierra Club, International Earthcare Center, has requested information not normally available through libraries but of practical use to field personnel. They are particularly interested in information on "ecological problems of tropical forests and arid zones, as well as information on development projects and environmental constraints." This information will be used for "resource inventories," "baseline studies," "projections of scarcities," and in "discussion of legal, regulatory, and
institutional aspects of resource management." If you have something to contribute or wish to correspond, contact:

Kathy Sheppard, Information Officer  
Sierra Club, International Earthcare Center  
800 2nd Avenue  
New York, NY 10017 USA

*Medical Expedition to Nepal*

The Woodlands Institute and the Johns Hopkins School of Hygiene are jointly sponsoring the second of two medical expeditions to explore health care in the Himalayas from January 11th to February 25th, 1982. For further information concerning the expedition and application procedures write or phone:

The Woodlands Institute  
Cherry Grove, WV 26803 USA  
Telephone 304-567-2632

*A New Film by Michael Oppitz*

A new film entitled *Shamans from the Blind Country* by Michael Oppitz is now available. The 16mm color and sound film is 224 minutes in length and documents healing practices among the Northern Magar of Central West Nepal. For information on distribution contact:

WSK-Productions  
5 Carmine Street  
New York, NY 10014 USA  
Telephone 212-989-2626

*Kirghiz Film to be Shown on PBS's (USA) Odyssey Series*

The Kirghiz of Afghanistan, a film produced in consultation with Nazif Shahrani, an anthropologist, will be shown in the USA on stations of the Public Broadcasting Service as part of the Odyssey series during the week of October 18th, 1981. The film documents the nomadic existence of the Kirghiz who inhabit the Afghan Pamirs in the Northeast of the Wakhan Corridor. The film contains rare footage of this high altitude region and the social, political, and economic life of the Kirghiz who have been forced to abandon their homeland due to the Russian invasion.

*Lha-Pewa Festival of the Thakalis - 1981*

From the first week of January this year, for sixteen days, Thakalis converged at Lharjung and Kobaang villages in the Kali Gandaki valley. There, they reinacted their clan myth of origin for the first time in twelve years.

At the height of the festival, 1500 Thakalis were assembled at Lharjung, the center of the event. Members of the four major clans who had come from Kathmandu, Pokhara, and Bhairawa were joined by local Thakalis from throughout Thak valley.
Surprisingly few anthropologists or other researchers came to witness this mountain drama. Michael Vinding (Denmark) who is working in the Jomosom region went down to observe the festival; Barbara Aziz (Southern Asian Institute, Columbia University, New York), in Nepal to continue work on pilgrimage, spent two weeks there; and Shigeru Ijima, Thakali specialist from Japan, visited the festival for a few days. The only other foreign observers were the experienced photo journalists, Okajima and Isogai, from Japan. Mr. Okajima had been at the 1968 festival while a graduate student working under Ijima. A Nepalese government film crew also recorded portions of the drama.

The Lha-Pewa (Sprê-lo) clearly remains a drama rich in force and tradition; it may be, however, in an inevitable process of change, with its Hindu and Buddhist elements challenging one another for precedence. It remains a performance without parallel in Nepal. Contrary to some expectations, the Lha-Pewa is still a vital tradition, a much anticipated affair which local ritual specialists and political leaders recognize as crucial to Thakali identity. We certainly may expect it to recur in 1993.

The light snow that covered Lharjung and Kobaang on the final day of the festival was seen as a traditionally auspicious sign, and, as the last researchers left Jomosom airport, they noticed four steel boxes—black, green, red, and white safes—one for each of the four clan gods, waiting to be carried down the valley to house the masks for the next twelve years. (Report submitted by B. Aziz)

*Asian Art Association Formed*

The Denver Art Museum announces the founding of the Asian Art Association for collectors and other persons interested in supporting and learning about the arts of Asia, including the Himalayan region, through special seminars, travel programs, visiting lecturers, gallery talks, etc. For information, write:

Oriental Department
Denver Art Museum
14th and Acoma Streets
Denver, CO 80204 USA

*Siva Exhibition*

"Manifestations of Siva," a major exhibition organized by Dr. Stella Kramrisch for the Philadelphia Museum of Art has opened with great public response and will be on view through the spring before travelling to museums in Fort Worth and San Francisco. In conjunction, a monograph by Dr. Kramrisch, The Presence of Siva, is published by Princeton University Press. The showing is sponsored by a major grant from the Atlantic Richfield Foundation.

*Tibetan Altar Refurbished*

The Tibetan Buddhist Altar at the Newark Museum, installed originally by Eleanor Olson and now under the care of Valrae Reynolds, Asia Curator, has been newly refurbished and reinstalled with recent Tibetan acquisitions of painting, sculpture, and textiles.
*Conference on South Asian Art*

The American Committee for South Asian Art will hold its first national symposium at the Minneapolis Institute of Arts May 7-9, 1981. For information, write:

Professor Rick Asher  
Department of Art History  
University of Minnesota  
Minneapolis, MN 55455 USA

*Archive of South Asian Art Photographs*

The American file for the Photographic Archive of the American Institute of Indian Studies Center for Art and Archaeology, Varanasi, India has been installed at the University of Pennsylvania in Philadelphia. More than 23,000 photographs and 2,000 color slides are on file for use by scholars and these will continue to grow in number. For information, contact:

Kanta Bhatia, Librarian (215-243-7460)  
Professor Michael Meister (215-243-8327)

Considerable Himalayan materials are included.

*Exhibition of Nepal Tribal Art Shown in Paris*

An exposition of "Art Tribal du Nepal" was shown through June 4, 1981 at l'Ile du Demon in Paris. A catalogue of the exposition was published. For information, contact:

l'Ile du Demon  
13 et 15 rue Bonaparte  
75006 Paris, France
IV. RESEARCH PROJECTS AND REPORTS

(Reports from Germany courtesy of Dr. Andras Hoefer)

*Temple Monuments in Himachal Pradesh

Researcher: Ronald Bernier (Fine Arts, University of Colorado)

Project:
Ronald Bernier has received a research grant from the University of Colorado to study temple monuments of wood and stone in Himachal Pradesh. This project is part of a long-term plan to document sacred structures, primarily in wood, throughout South Asia. His publications on the subject include Temples of Nepal, The Nepalese Pagoda: Origins of Style (both S. Chand and Co., Delhi), Splendours of Kerala (co-authored for Marg Publications, Bombay), and Temple Arts of Kerala (in press, S. Chand). In December and January he will lead a study tour on the subject of the arts of Rajasthan and South India with special emphasis on palaces of the Maharajas.

*Wood Fuel Utilization by Small-Scale Industry in Nepal

Researcher: Deanna G. Donovan, Institute of Current World Affairs, Kathmandu, Nepal

Project:
The major goals of this research effort are to identify those industries dependent on wood fuel and to define their energy requirements. Secondarily, the project seeks to investigate the economic and environmental impacts of industrial wood fuel use on household consumption patterns in various areas. Finally, a brief survey of the energy supply options available to small-scale industry and the feasibility of introducing alternative energy technologies is planned.

Background. Recent reports of government and other agencies have described vividly the worsening condition of Nepal's hill forests due to demands for fuel, fodder, building materials and cropland. The demand for fuelwood overshadows all other forms of wood use in terms of volume and forest area affected. Although for the most part fuelwood demands derive from domestic needs for cooking and heating, it is recognized that the processing of various agricultural and forest products in rural areas can give rise to heavy demands often concentrated in a single locality. HMG National Planning Commission as well as several foreign assistance groups point to the need to develop rural industry in order to provide the rural population with an alternative to further encroachments of the already limited and degraded forest areas. It is vitally important that the introduction and expansion of rural industry does not exacerbate the problem of fuel scarcity in the hill regions. The investigation of the energy requirements and technological options for small-scale rural industry is thus appropriate and necessary to ensure that the net economic and environmental effect of industrial development in rural Nepal will be positive.

Organization. The basic data needed to define the energy requirements of various industries are being collected through observations and interviews at the production sites. The principal questions to be asked are: Which industries
are using wood fuel? How much wood fuel are they using in total annual production and per unit of output? In what type of process are they using wood fuel and what type of facilities, such as kilns, ovens, etc., are employed? What alternative energy sources are available in the community? The initial list of industries to be investigated include alcohol, fruit processing, ginger, cardamom, butter, cheese, bricks and metal crafts, among others. Four separate questionnaires have been prepared to aid in the collection of data from factory owners, tea shop and hotel proprietors, forest officials and managers of new energy supply sources, such as biogas and hydel facilities. The investigation of the technical feasibility of converting to alternative energy sources will draw heavily on the engineering experiments and field studies of other research groups in Nepal. An analysis of the survey data will culminate in a series of reports, both descriptive and prescriptive with regard to industry development and the integration of industrial production in rural communities for a more efficient and ecologically sound exploitation of the natural resource base.

*Newar Research*

Researcher: Robert Levy (Anthropology, University of California, San Diego)

Project:
Levy is completing a manuscript on the socio-cultural, religious, and symbolic organization of Bhaktapur based on field research conducted from 1973 to 1976.

*Fused rock and a landslide in the Langtang Valley*

Researchers: L. Masch, E. Preuss, A. Schroecker and H. Heuberger (Munich).

Project:
Big landslides occurring in mountain areas are among the most hazardous of geological events. They block rivers, creating new lakes, but also destroy settlements. Therefore, the geological and geomorphological research of landslides and landslide formation has not only scientific, but also practical importance.

In the Langtang Valley, north of Kathmandu, a pumice-like glassy rock was found on a large failure in gneisses by J. S. Scott, a student of geology and member of Tilman's expedition in 1949. This type of glass is attributed to frictional rock-fusion that may occur on fault planes during earthquakes. The Langtang rock glass was considered to be the best known example for such an origin.

Later investigations by Masch and Preuss in 1973 confirmed the formation of this glass by frictional fusion, but cast doubt on the deduced origin. For a similar occurrence near Koefels in the Oetz Valley (Tyrol), Preuss had shown, that the glass was probably generated at the base of a landslide in crystalline rock. The similarity of the glassy rock types, and of the geomorphological situations, lead to the assumption of a similar origin in both areas.

Three of the authors, Masch and Schroecker, petrographers, sponsored by the Deutsche Forschungsgemeinschaft, and Heuberger, geomorphologist, investigated, in November 1978, the total area of rock failure and rock glass
formation between 3,900 m and 5,800 m a.s.l. on the north slope of the Langtang Valley. It could be proved that the rock glass covers the 25 sq. km base of a huge fossil landslide (more than 10 cu. km). The rocks at the base of the landslide were fused by the frictional heat of the landslide movement. The event happened before the last glaciation, i.e. more than 20,000 years ago. Fluvial dissection has created magnificent exposures of the gliding plane and its rock glass cover. Some parts of the landslide masses are hidden by quaternary glacial accumulation, whereas others have been eroded away by glaciers. So far the occurrences at Langtang and Koefels are the only known instances of fused rock in a landslide, but both demonstrate the mechanics of very large landslides, especially their high velocity.

*Great and Little Tradition in Nepal (Sanskritisation) -- Investigations into origin, development and structure of shrines and their cults in Nepal.*

Researchers: Dr. Ing. Niels Gutschow, Architect, University of Kiel (West Germany)
Dr. Phil. Gunter Unbescheid, Indologist, University of Kiel/Heidelberg

Project:
Framework. The project is based on the well-known fact that local cults and godlings as well as temples and shrines are connected and identified by a process of gradual assimilation with the heroes and gods of the "great" Indian Hindu tradition. On the side of the so-called "great" tradition there seem to be mainly two figures, which prove to be most "suitable" for this kind of assimilation, namely Bhairava and Devi with all their possible manifestations. Accordingly the social basis for this is a steadily growing influence of religious elites linked by tradition with the orthodox aspects of Hindu culture. This elite gradually gets hold of the ritual performance, or at least tries to penetrate it. The intention of this research is to study the process of this "shifting of ideas" in Nepal in terms of historical developments, architectural manifestations, as well as mythological structures, whereby certain village gods and goddesses are brought into contact with such famous figures as Bhairava or Durga.

Research Program. The project is designed for a period of five years. Initially it focused on a thorough survey of three different areas in Central and West Nepal: in the Gorkha District, the Jumla area (Karnali Basin), and Banepa (east of Bhaktapur), successively. There is evidence for the formulation of common ideas underlying the process of "sanskritisation" in Nepal. In accordance with both of the aspects of "sanskritisation"--that is, the socio-historical and the mythological—the activities of the group concentrate on two main strains of investigation respectively.

On the one hand (the religious), temples and shrines are described and scaled, and their social functions and rituals given. The most important ones are drawn including an interpretation of their stylistic elements. Inscriptions and documents (guthi-papers) are collected and translated, to restore the historical background of the sites. On the other hand, all the festivals and rituals connected with these places are described and analysed. In addition, manuscripts (puja paddhati etc.) are photographed and translated. The vast hither-to-almost-completely-ignored amount of oral literature, such as legends of deities and temples as well as folk stories and folk songs, is collected systematically and translated. Thus the particular "mythical atmosphere" of certain deities is understood and the structures of change, which penetrate
from socio-historical sources into the legends, thereby "shifting" the ideas, are isolated.

By comparing the various places by means of different styles of construction, different ritual patterns and their mythological explanations, and in terms of more or less successful penetration by ritually highly specialized groups, it is possible to trace various levels of cult settings and to explain these very levels in terms of more or less "sanskritised" structures of shrines and temples.

Fieldwork Done. The project started in September 1980, with four months of field research in Gorkha, which, thanks to supportive collaboration with the Department of Archeology of His Majesty's Government and with the local authorities, proved to be very successful. Extensive research could be done in Gorkha town itself with the Kalika-temple inside the Gorkha Darbar as the ritual center of the whole district. A total of 26 ground plans, site plans, and sections could be drawn. Forty-six legends, folk tales, and folk songs were recorded in and around Gorkha town. During the stay the spectacular celebration of Durgapuja at the Kalika-temple of the Gorkha Darbar was studied and documented with motion picture photography. The ritual connections between the various temples of the district were studied, following the traditional "sister relationships" of the deities amongst themselves. Thus the shrines of the dominating "7 sisters," including Kalika, and a couple of smaller ones in connection with them, were surveyed.

With the permission of the Department of Archeology and the Guthi Samsthan, all together 85 documents could be photographed in the Mal Adda in Gorkha as well as in the Guthi Lagat Phat in Kathmandu. Wherever possible, unpublished inscriptions were copied and published ones checked with the printed version. At the moment this material is in the process of translation.

(Project sponsored by the German Research Council, beginning September 1, 1980.)

*Kashmir Politics Project*

Researchers: Leo Rose (Political Science, University of California, Berkeley)
Robert Huttenback (Chancellor, University of California, Santa Barbara)

Project:
Leo Rose and Robert Huttenback are collaborating on research on the evolution of political and governmental institutions in Kashmir from the mid-nineteenth century to the present. Huttenback has been conducting the historical research on the evolution of those institutions; Rose will be working in Kashmir and India for six months, beginning in September 1981, on the more contemporary developments.
*High Altitude Research Programs of the Documentation Center for High Altitude Medicine in Nepal (DCHAM)*

Researchers: Documentation Center for High Altitude Medicine: Section of the Association for Comparative Alpine Research (Brunhildenstrasse 3, 8000 Muenchen 19, West Germany)

Projects:
The aim of DCHAM is to promote research programs in high-altitude (HA)-physiology and -medicine, the documentation and analysis of HA-complications and -accidents, as well as the improvement of the international cooperation and communication of physiologists and medical doctors working on HA-problems.

With the support of the Deutsche Forschungsgemeinschaft, several groups of medical scientists, have been conducting research in Nepal since 1975.

The main fields of interest of these investigations have been changes of circadian rhythm, HA-retinal-hemorrhages, HA-cerebral- and -pulmonary-edema, the protein metabolism, and alterations of the cardio-pulmonal system, of the blood and its components and of the body hydration, all due to the influence of HA.

A particular focus of the research is on microcirculatory disorders due to HA-hemoconcentration and the application of hemodilution in order to cope with this. Hemodilution involves infusion of human serum preparations (for example), with or without phlebotomy, in order to reduce the blood viscosity. Lowered blood viscosity improves the oxygen transport capacity of the blood, decreases the cardiac pump work, and increases the tissue perfusion which results in a better heat supply, as to the fingers or toes. In several HA-expeditions this method proved safe and feasible in reducing HA-climbing risks such as frostbite.

One of the main hazards of HA is rapid dehydration and, consequently, severe hemoconcentration. This is one of the factors which most limits human adaptability to HA. This research stresses the importance of large amounts of oral (or intravenous) fluid intake, not only for expedition climbers but also for trekking tourists.

A Sino-German joint program in which hemodilution will be applied to caucasians of the Tibetan plateau who suffer severely from HA-polycythemia-disease may be seen as one of the outcomes of our activities in Nepal.
V. PUBLICATIONS NEWS

*New Publications from CEDA

The following are new publications of the Centre for Economic Development and Administration, Tribhuvan University, Kirtipur, Nepal. A full list of some 144 CEDA publications in Nepali and English is available from the Centre.

Agrawal, Govind Ram  
1980 Resource mobilisation in Nepal  
260 pp.

Dhungana, Bhavani  
1980 Indirect Taxation in Nepal  
153 pp.

Lohani, Prakash Chandra  
1980 People's participation in development

*New Books, Monographs, and Papers

Aris, M. and Kyi, Aung San Suu (eds.)  

Blaikie, P. M., Cameron, J. and Seddon, J.D.  
1980 The Struggle for Basic Needs in Nepal  
Paris: OECD Development Centre. 100 pp. (On sale through OECD Publications Office, 2, rue Andre Pascal, 75775 Paris, Cedex 16 France.)

Fuerer-Haimendorf, Christoph von  
1980 A Himalayan Tribe: From Cattle to Cash  

Sharma, T. C. and Majumdar, D. N. (eds.)  
1980 Eastern Himalayas: A study on Anthropology and Tribalism  
Delhi: Cosmo Publications. 221 pp.

Snellgrove, David and Skorupski, T.  
1981 The Cultural Heritage of Ladakh 2: Zangskar and the Cave Temples of Ladakh  

Thapa, Shyam and Retherford, Robert D.  
1981 Infant Mortality Estimates Based on the 1976 Nepal Fertility Survey  
Working Papers No. 3. Honolulu: East-West Population Institute. (For copies write to: Publications Office, East-West Population Institute, 1777 East-West Road, Honolulu, Hawaii 96848 USA.)
Tucci, Giuseppe
1980  The Religions of Tibet
Translated from the German and Italian by Geoffrey Samuel. Berkeley: The University of California Press.

*Reprints

Allen, B. C.
1980  Naga Hills and Manipur: Socio-Economic History
Delhi: Gian Publications. 151 pp., $18.00. (Available through D. K. Agencies, Inderlok, Old Rohtak Road, Delhi-11035, India.)

Rose, H. A.
1980  A Glossary of the Tribes and Castes of the North West Frontier Provinces and the Protected Territories of the North West Frontier Provinces
Delhi: Amar Prakashan. 3 volumes, $110.00 per set. (Available through D. K. Agencies, 313/74 Inderlok, Old Rohtak Road, Delhi-11035, India.)

*New Journal

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VI. DISSERTATION ABSTRACTS ON HIMALAYAN TOPICS

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*ARIS, Michael Vaillancourt
-- Copies available through the British Library Lending Division, Boston Spa, Whetherby, West Yorkshire, accession no. D26492/79 (BLFD).

*ARYAL, Pushar Raj
-- Order copies from the Canadian Theses Division, National Library of Canada at Ottawa; available only in microfiche format, Fiche No. 39593, $9.00.

*ASY, Merril Boice
-- DAI 41, 3 (September 1980), p. 902/3-A
-- Order No. 801951
-- Title: Diploma Level Agricultural Education Follow-Up Study: Institute of Agriculture and Animal Science, Rampur, Nepal

The purpose of this study was to obtain information and value judgements from former students regarding the educational experience received at the Institute of Agriculture and Animal Science at the time of their preparation to be vocational agriculture teachers, and, in the light of these observations, to identify the kind of vocational experience and training to provide for present and future students.

To delineate the scope of the problem, attention was focused on those variables significant in identifying what changes should be made in the program at the Institute of Agriculture and Animal Science which would lead to more satisfied students with the interest and capacity to perform as vocational agriculture teachers.

The primary objectives of this study in terms of criterion questions were: (1) To what extent former diploma level agricultural education students received
adequate training at the IAAS to become vocational agriculture teachers? (2) To what extent did former students drop out of training and for what reasons? (3) Why did former students quit their jobs for which they were trained? (4) What did employers of diploma level agricultural education graduates feel about the training the graduate had received at the IAAS?

The Sample. The sample consisted of data collected from graduates and dropouts of the diploma level agricultural education course for the period 1973-1975. All the students were sent questionnaires, including those who dropped out for any reason. One hundred and three former students were identified, of which 14 had dropped out of training. In addition to the sample, one hundred seventy-eight questionnaires were sent to the former students of the certificate level course, 46 of whom were dropouts.

To obtain judgements of the employers of the former students, a questionnaire was prepared which provided an opportunity for District Education Officers and District Agricultural Officers to give their opinions of the work and training of the IAAS graduates.

Methodology. The research instrument was developed around specific questions, the answers to which gave indications of the students' perception. The questions were first prepared in English, then translated into Nepali. Following a pre-test, some questions were changed, others omitted because respondents did not answer questions requiring written answers.

Questionnaires were sent through the Nepali postal service. Addresses were obtained from employment records of the Ministries of Education and Agriculture, information from teachers or friends of former students. Thirteen percent of the questionnaires were returned due to insufficient, incorrect or unknown addresses.

Collating and translation of the questionnaires were carried out by five students. The questionnaires were checked for completeness by the research committee. Frequency counts and percentages were made for all items on the questionnaires.

Conclusions. (1) Response was disappointing since only 35.9 percent of the graduates and 14.6 percent of the dropouts sent in questionnaires. (2) The question of why students dropped out of training was treated in the light of previous studies because of the limited number of responses. Listed were reasons of being sick, lack of funds and getting married. The location of the IAAS was indicated by 36 percent as a factor of why they dropped out of training. (3) The mobility of graduates from the districts of their birth to their present work addresses was similar, percentage-wise, and indicated that employment was available within the general area of the agricultural teachers' homes, a desirable factor in job satisfaction. (4) All of the 32 graduates who responded to the questionnaires reported they received salaries of 570 rupees, considered top for length of service and level of training in the Nepali education system. (5) Graduates indicated they were generally satisfied with their work as agriculture teachers, but 56 percent also indicated they would have quite their jobs if there had been anything else to do. All the graduates rated their training as satisfactory to good. (6) Seventy-eight percent of the District Officers felt the IAAS was covering the right training area to help students in their jobs. (7) As an institution, the IAAS was faulted for not
meeting graduates' needs for inservice training. Dormitory conditions were indicated by 70 percent of the students as poor to fair.

*ASHBY, Jacqueline Anne

— DAI 41,1 (July 1980), p. 405-A
— Order No. 8015635
— Title: Small Farms in Transition: Changes in Agriculture, Schooling and Employment in the Hills of Nepal

This study examines responses among small farmers in three microenvironments in the hills of Nepal to new agricultural technologies and opportunities for investment in schooling and non-farm employment. Although all 332 sample farms are less than three hectares with a subsistence component, there are major differences in physical environment and resource base among them. Consequently a farm typology was developed to distinguish separate groups of farms with similar characteristics. Factor analysis identified commercialization of crop and livestock enterprises and sale of family labor in the non-farm labor market as major features differentiating farm enterprises. Four types of farms were distinguished: subsistence farms are the least prosperous; part-time farms are similar in size to subsistence farms but have higher cash earnings from non-farm employment; small livestock commercial farms also obtain higher cash earnings but from livestock production; large crop commercial farms have the largest landholdings and produce a crop surplus for market.

Analysis of rates of adoption of high-yielding rice and maize varieties in each micro-environment and among types of farm shows that patterns of adoption over time cannot be attributed to farmers' propensity to innovate and had an ecological basis. Farmer adoption decisions were more complex than the usual dichotomy between acceptance or non-acceptance suggests. Constraints to experimentation or early adoption are not necessarily synonymous with those that determine extent of use in the long run. Adoption rates varied between technologies and types of farm depending on the appropriateness of a specific technology to location and farm type specific conditions. These findings emphasize the importance of the interactions between ecological variation in farming environments, the characteristics of specific technologies and types of farm for the analysis of diffusion rates.

The extent to which household members engage in non-farm employment is associated with access to schooling. Although family members with a given level of schooling obtained equal chances of employment, as a result of limited capacity to accumulate schooling subsistence households have been unable to take full advantage of opportunities in the local non-farm labor market. Comparisons of school enrollment and literacy rates among types of farm show pronounced disparities particularly between subsistence and other farm types. Low enrollment rates were associated with a need for family labor on the farm, reflected in higher drop-out rates and participation in family farm work for young men from subsistence farms. Caste-ethnic status, associated with farm type, was also an important explanatory factor in differential access to schooling. While women from all farm types were most disadvantaged in school
enrollment, their on-farm labor tends to underwrite increased access of male children to schooling. Discrimination among children within the family with respect to schooling appears to be a strategy for obtaining advanced schooling credentials for at least one son while fulfilling requirements for on-farm family labor. Differences in schooling levels among male siblings were most pronounced in subsistence and part-time types of farm household. Higher probabilities of year-round non-farm employment and earning associated with advanced schooling credentials provide a compelling rationale for aspirations for advanced schooling. The strategy of discriminating among children within the family indicates that poorer households tend to reproduce a range of inequality in access to schooling despite expanded opportunities for sending children to school.

Generation of non-farm employment compatible with the needs of subsistence farms appears critical to their long-run survival. Involvement in non-farm employment has ramifications for farmer adoption decisions as well as for decisions about investment in schooling. The findings suggest the importance for policy and research of integrating concerns with the agricultural and non-farm dimensions of the small farm enterprise.

*BURGHART, Richard
- Copies available through the British Library Lending Division, Boston Spa, Yorkshire, accession no. D25615/79 (BLLD F).
-- Title: The History of Janakpurdham: A Study of Asceticism and the Hindu Polity

*CANZIO, Ricardo Oscar
- Copies available through the British Library Lending Division, Boston Spa, Whetherby, West Yorkshire, accession no. D31352/80 (BLLD F).
-- Title: Sakya Pandita's "Treatise on Music" and Its Relevance to Present-Day Tibetan Liturgy

*ENDER, Gary Peter
— DAI 41, 3 (September 1980), p. 1150-A
— Order No. 8020925
— Title: The Development of Road Transportation in Nepal and Its Relationship to Agricultural Development

This study examines road transportation in Nepal, and its relationship to agricultural development. Road transportation is crucial in Nepal's development because most villages are isolated and roads are the dominant mode. There have been large outlays on road construction, yet little was known about road traffic. In this study, paved road traffic is analyzed thoroughly.
The relationship between roads and agriculture, the leading sector, is also analyzed. Appropriate strategies for future road construction are recommended.

Previous studies on roads in Nepal did not consider road-related problems from a national perspective. In this study, certain extensions of central place theory are employed. Friedmann (1966) provides a dynamic qualitative model of the process of spatial integration based on increasing and decreasing ascendancy of a primate city. This model is examined as a vehicle for the analysis of nationwide transportation issues in Nepal. For the local road analysis, central place theory is augmented by the use of a cumulative scale.

The traffic data collected describe in detail important long-distance traffic on paved roads, including seasonal fluctuations. These data reveal the dominance of Kathmandu in all types of traffic. Historical and demographic evidence corroborate the primacy of Kathmandu. It is concluded that the Friedmann model is relevant to Nepal. The concentration on construction of highways and feeder roads (many serving Kathmandu) and the neglect of local roads are thus understandable, although not justified.

Yields of rice and maize in Nepal have not increased over the past 15 years, although improved seed and fertilizer are available in district centers. In the Tarai the potential for rapid agricultural development exists, but the lack of an all-weather local road network has been a major bottleneck, restricting access to improved inputs. It is recommended that the government of Nepal administer a vigorous program of local road improvements in the Tarai.

The process of development in the hills will be more difficult than in the Tarai. In the near future the north-south feeder road will best serve the hills. Such roads will join the hills to the rest of the country (via the east-west highway in the Tarai) and permit trade on the basis of regional comparative advantage, the hills eventually specializing in horticulture. The surplus grain of the Tarai will also become more affordable in the grain-deficit hills.

It is also recommended that priority not be given to the proposed, extremely expensive mid-hills east-west highway. The Kathmandu-Pokhara highway, which would become part of the proposed highway, has the lowest traffic and the lightest truck loads of the roads surveyed. It is unlikely, moreover, that significant benefits would be derived from a highway connecting hill areas with similar development problems.

Given a highway and feed road construction strategy, one must choose among similar investment possibilities. To conserve scarce resources, a benefit/cost analysis using the traffic data presented herein should be performed. The benefit/cost analysis should be part of a decision-making framework which takes account of the spatial distribution of roads. This study also provides an analysis of the relationship between road tax statistics and actual traffic, obviating the need for repeated traffic counts.

A method is also developed in this study to optimize the location of improved, local roads based on the hierarchical distribution of periodic markets. It assigns priorities to the markets, which can then be connected to the paved road network by improved, local roads in accordance with these priorities.
The analysis of road user charges and maintenance reveals sensible taxation policies and that road revenues cover about one-quarter of costs.

*FANGER, Allen C.*

-- Ph.D., Syracuse University, 1980, 495 pp.

-- DAI 41, 8 (February 1981), p. 3642/3-A

-- Order No. 8104522

-- Title: Diachronic and Synchronic Perspectives on Kumaoni Society and Culture

This dissertation seeks to describe and explain socio-cultural change among the Khas-Rajputs and Dom Silpakars of Kumaon in the central Himalays. The basic assumption is that to the extent one understands the historical background of ethnographic data, the better one will be able to comprehend and explain it.

The dissertation is divided into two parts. Part One is a diachronic analysis of Kumaoni society and culture, beginning with the earliest known references to the Khasa and continuing through the reigns of the Katyuris, Chands, Gurkhas and British. Attention focuses on the changing system of social stratification. Accordingly, I explore principles of land tenure, occupation and social status, cast privileges and sanctions, and various other cultural institutions (e.g., marriage rules, ritual behavior) which reflect and influence status, rank and power.

Apparently, today's Thakur-Rajput population is descended largely from the Khasa who, in turn, are derived largely from an ex-Ksatriya Aryan tribe who were ranked as Sudras until the Chand era. Under the Chand (approximately 1000-1790 A.D.), the Khasa formally were raised to Ksatriya status. However, this elevation was not accompanied by a significant change in the ritual and social life of the Khasa who remained a subjugated, exploited population.

During Chand rule social stratification was relatively open and fluid, as immigrant plains Brahmins and Rajputs competed for power and position. While many received lucrative land grants and achieved high rank, others (Rajputs mostly) were forced to adopt agriculture and merged with the Khasa population.

Under the British, *jati* ideology became more firmly established and *jati* groups became relatively closed. However, at the same time, the Khasa, and to a lesser extent the Dom, became more independent politically and economically. Most Khasa regained ownership of their land and by the 20th century began to supplement their income with employment migration to the new Kumaoni "hill stations" and north Indian plains, and by joining the military forces. As Kumaon lost its geographical and cultural insularity, orthodox influences poured in from the plains. Consequently, increasing numbers of economically more secure Khasa sought to legitimize their position as proper Thakur-Rajputs by emulating the standards and life style of plains-Rajputs. In time, segments of the Dom-Silpakar population also benefitted from the new opportunities and, under the influence of the Arya Samaj, a Silpakar Sanskritization movement emerged in the 1920s.
In Part Two, ethnographic data, based on a year's fieldwork (1966-67) in the Kumaoni village of Bargaon (506 Khas-Rajputs and 11 Dom-Silpakars), are presented and related to the historical patterns discussed in Part One. Special attention is placed on the strong patterns of Rajput employment migration and social mobility aspirations and on Dom Sanskritization. The influence of these trends on jati behavior, inter-jati social relationships, the joint family, marriage, economy, perceptions of powerful beings, spirit possession seances (jagars), rites of passage and cyclical ceremonies is examined. Hopefully, the dynamics of the ethnographic data are more comprehensible as a result of the extensive historical background.

*FISHER, Robert Earl*

— Ph.D., University of Southern California, 1980.
— DAI 41, 6 (December 1981), p. 2332-A
— No order number indicated; order by name, author, date.
— Title: Buddhist Architecture of Kashmir

Kashmir is known to have played a key role in the spread of Buddhism from India on into the rest of Asia. Translators and pilgrims came there throughout the first millennium and Kashmir and the adjacent Himalayan regions gradually became something of a pilgrimage area. Unfortunately, Kashmir's own Buddhist remains have not fared well over the centuries. With the Muslim takeover completed in the fourteenth century, Buddhism ceased its vigorous existence there and what remained of the monuments fell into decay, often dismantled for use as building material.

In this dissertation, the fragmentary remains are studied, aided by numbers of votive objectives that reproduce the ruined monuments. Fortunately, some literary evidence is available. The twelfth century chronicle by the Kashmiri Kalhana, the Rajatarangini, contains numerous references to Buddhist monuments and these have been verified in Stein's translation of 1900. Chinese travellers also left some records of their visits to the valley and these have also been used in reconstructing the ruined monuments. Finally, comparative material from neighboring regions has been utilized to help determine how Kashmiri Buddhist architecture may once have existed.

The opening chapter summarizes the history of Buddhism in Kashmir, utilizing the above mentioned sources as well as modern commentaries. The evidence indicates nearly continuous activity from the third century B.C. through Kalhana's time in the twelfth century. Next, Buddhist architecture is studied in terms of the major types of monuments, divided into functional and symbolic elements. The major examples of each type were known in Kashmir. The next two chapters are devoted to the only three known Buddhist sites that contain remains adequate for study. Harwan, Ushkur and Parihasapura are today nothing but ruined foundations, barely above ground level. Other objects found about the sites and sculptural and literary evidence enable some suggestions to be made as to date and original form. Chapter five is devoted to the Kashmiri Buddhist stupa, a monument that became a distinctive type in the valley. This fundamental element of Buddhist architecture developed a particular form in the Kashmiri area and this form may have reached across to the western edge of China, playing a role in the complex evolution of the Asian stupa or pagoda.
The introduction emphasizes the fundamental role played by Kashmir in the development of certain architectural elements, especially the stupa/temple construction and the type of stupa associated with the Himalayan region.

*HOLMBERG, David H.*

— DAI 41, 1 (July 1980), p. 304/5-A
— Order No. 8015684
— Title: Lama, Shaman, and Lambu in Tamang Religious Practice

This study reconstructs materials collected during two years of ethnographic research among the Western Tamang of highland Nepal. I frame an ethnology of the Tamang within the problematics of multi-faceted religious systems. Further, I reconsider approaches to religion and society in Nepal and reassess anthropological theories which explain the structure of complex religious systems.

Tamang religion replicates a pattern found throughout the Himalays, South and Southeast Asia. The Tamang, a clan-based society, participate in Tibetan Buddhism and their most honored practitioners are lamas who preside over memorial death feasts which are large interclan and intercommunity rites. Tamang also recognize specialists in the protection of prosperity, lambus, who through sacrificial exchange and measured invocation honor local earth divinities and excercise harmful spirits. Furthermore, Tamang consult shamans, called bombos, who, to revive life, embody divinities, spirits, and harmful agents and who unveil an alterworld.

Nevertheless, Tamang religion is unified; each component of the religious system acquires meaning in contrast to other components and cannot be understood in isolation. I interpret this system with reference to levels of Tamang social organization and the logic of Tamang social relations, particularly those expressed through bilateral cross-cousin marriage between clans. The dissertation uses a detailed exposition of religious practice and symbology to show that the articulation of Buddhist, chthonic, and shamanic domains forms a system structured in tension, not harmonious interplay.

The thesis has four parts. After a comparative and theoretical introduction, Part I describes the circumstances of the Tamang in greater Nepali culture and society and the particular circumstances of the Tamang among whom I conducted research. It considers ecological, political, economic, and social relations between the Tamang and other groups in Nepal and among the Tamang. Part II introduces Tamang religion through an outline of Tamang cosmology and the principles that articulate its structure; it sketches the symbolic field.

Part III examines Buddhist, chthonic, and shamanic practices. It explores the complements and links between ritual domains. First, I review the Tamang ritual calendar and then describe the focal specialists, their recruitment, their roles in Tamang society, and their ritual repertoires. The exegesis of three exemplary rituals provides the context in which I delineate a perspective for each component; each is a selection and rendering of the total symbolic field. I
contrast each ritual vantage according to orientation, worldview, and social domain: The Buddhist circumscribes an otherworldly orientation which structures the field in an ultimate determinacy and operates on the highest orders of Tamang society; the chthonic orders this worldly relations in determinate exchange for the village as a whole and for separate households; the shamanic unfolds a problematic and alterworldly perspective in counterpoint to Buddhist and chthonic determinacy. I demonstrate that each ritual vantage presupposes the others in order to proceed. Finally, Part III notes dynamic changes in Tamang religious practice and an incipient process of rationalization in Tamang Buddhism.

Part IV reviews the entire system to discuss analytical implications. I consider how the Tamang themselves relate their divergent ritual practices in myth and conclude that Tamang Buddhism requires chthonic and shamanic alternatives to form, in spite of the fact that the components appear to be irreconcilable. Other approaches to multi-faceted religions have concentrated on discovering historical strata and interlocking functions; this study provides a supplemental vantage. In conclusion, I suggest that the relations distilled in Tamang religion are one configuration in an extensive field of possibility and that Tamang religion is directly comparable to other variants of Tibetan and Theravadin Buddhism. Tamang religion and society, intriguing in their own right, point to a refinement of theoretical approaches toward complex religious systems.

*JONES, David Alun Gwynedd

— Title: An Examination of Some Aspects of Louis Dumont's Anthropological Theories on India: With Reference to the Gurungs of Nepal

*JOSHI, Gopal Man

— DAI 41, 2 (August 1980), p. 506/7-A
— Order No. 8011163
— Title: A Comparative Analysis of the Requirements for Initial Office Employment in the Kathmandu Valley, Nepal

This study was undertaken to determine whether or not there was a significant difference in the perceptions of business teachers in secondary and post-secondary institutions and employers in government and business with regard to the requirements for initial office employment in the Kathmandu Valley, Nepal.

Also related to the problem were analyses to determine whether or not there were significant differences in office employment requirements when the participants' responses were classified by their demographic backgrounds.

Eighty-seven or 64.9 percent were returned. Skill requirements in terms of English and Nepali typing and shorthand were indicated by respondents. Twenty-seven tasks important to the office and 19 business courses needed for office administration positions were noted.
The data were statistically analyzed by applying the techniques of chi-square analysis and Fisher's exact test. Statistical comparisons were made between teachers' and employers' responses.

The following conclusions are based on the findings of the study.

1. Shorthand skills commanded little importance for office employment. However, shorthand skills were more acceptable in the "Nayab Subba" position.
2. Business courses considered important for decision making positions were overview, decision-making types of courses, while the courses identified as important for other positions were clerical in nature.
3. As compared to teachers, employers placed more emphasis on work experience.
4. While more teachers placed emphasis on skill requirements, employers did not require similar skills.
5. Business employers and respondents from educational institutions emphasized the business-related tasks, such as calculating depreciation, interest, premiums, etc. and using banking services, while government employers placed less emphasis on identical tasks and courses.
6. In comparison to smaller organizations, larger organizations demanded younger personnel with typing skills, such as in the position of "Kharidar."
7. Larger organizations placed greater emphasis on routine office tasks in the position of "Section Officer," such as recording transactions in basic accounting records. On the other hand, non-routine tasks like writing office correspondence was not important for higher positions in larger organizations.
8. Larger organizations emphasized business courses more in comparison to smaller organizations.
9. Older respondents placed greater emphasis on work experience.
10. Younger respondents were inclined to give more importance to skill requirements than did their older counterparts.
11. Older respondents emphasized routine, clerical type tasks, for instance, filing records in the position of "Kharidar."
12. Respondents with a master's degree or more placed higher emphasis on decision-making tasks. On the other hand, persons with a bachelor's degree or less did not attach as much importance to skill courses. Most of the respondents with an advanced degree supported the need of shorthand and typing skills for office administration positions.
13. More of the respondents with no work or educational experience in countries outside Nepal, in comparison to the respondents with work or educational experience, gave importance to Nepali shorthand for the position of "Nayab Subba."
14. Persons with work or educational experience in countries outside Nepal placed more emphasis on decision-making tasks and courses. Respondents with work or educational experience in countries outside Nepal, in comparison to respondents without work or educational experience, gave more importance to shorthand skills for the "Kharidar" position. The typing course was given more importance by the persons with work or educational experience outside Nepal.
15. Persons with less work experience emphasized skills for office positions.
Stochastic models for the demographic evaluation of contraceptive programs are presented, with particular application to the family planning program of Nepal. These models are validated and applied to the world fertility survey data and other survey data available.

The approach used is to estimate the contribution in units of fertile years when there is a contraceptive program compared to when there is no contraceptive program. Then the reduction in fertile years due to the contraceptive only can be estimated. This estimate is translated into the number of births averted. We employ the prevailing age specific potential fertility rate, at the time of acceptance of a contraceptive.

For the sterilization program, the methodology is parallel to the theory of constructing a current life table, because sterilization is an absorbing state as far as the possibility of being pregnant is concerned.

When sterilizations and pregnancies are studied, calculations for the reduction in fertile years due to a contraceptive are made parallel to the theory of constructing the life table in competing risks by various mortality forces.

For temporary contraceptives, such as IUD and the pill, three states are considered, namely (1) fertile state, (2) infertile state due to contraceptive, and (3) infertile state due to pregnancy. The first two states are transient, while the last one is an absorbing state for a given period of time. A woman in any age group is assumed to be in one of these three states. The transition probabilities of changing from one state to another within a certain length of time are calculated. The basic parameters involved in calculating these probabilities are the intensities of risk of changing from one state to another. Within an age group, the model is assumed to be time homogeneous in the sense that the transition probability does not depend on separate points of time within the age group, but depends only on the length of the time interval. However, for the same length of time, the probability changes from one age group to another. The intensity functions are calculated for each age group by the method of maximum likelihood and their approximate variances are obtained.

The expected number of fertile years experienced by a cohort of women in the population under consideration while passing through the reproductive process is estimated for each age group in the following two ways: (1) The model is assumed to be similar to a simple illness and death process since the period a woman is using a contraceptive and the period she is fertile are alternating over time. The periods of gestation and postpartum amenorrhea make up the absorbing state. Hence, repeated calculations are done for each such period. (2) Instead of repeating the procedure several times as above, where the error in assumptions will be magnified, the model is employed to find the contribution in fertile years.
The number of women in each state at any point of time is estimated by using the trinomial theory and the respective transition probabilities. When none of the women adopt a contraceptive, a similar calculation is done by using the binomial theory.

Finally, further studies that may be undertaken using this model are stated.

*KARKI, D. B.
-- M.A., Australian National University (Canberra), 1980.
-- Title: The Impact of the Supervised Sajha (Cooperative) Program on the Credit Function of the Sajha Societies: A Case Study of Nepalese Cooperatives.

*MARCH, Kathryn S.
-- Ph.D., Cornell University, 1979, 428 pp.
-- DAI 40, 9 (March 1980), p. 5101-A
-- Order No. 8003950
-- Title: The Intermediacy of Women: Female Gender Symbolism and the Social Position of Women among Tamangs and Sherpas of Highland Nepal

This dissertation looks at women and at beliefs about femaleness in two ethnic groups of highland Nepal. It explores the relation between gender symbolism and the position of sexed individuals in the world.

The fieldwork of this thesis was conducted among the Sherpas and the Tamangs in Nepal. They are two distinct ethnic groups although they have profound historical, linguistic and religious affinities. Both groups are organized into patrilineal clans into which women marry virilocally. And both are Buddhist, deriving their sense of history from greater Tibetan civilization. An idiom of reciprocal exchange constitutes the basis for social and ritual action in both groups.

Based upon this fieldwork and the insights it provides, the dissertation has become an analysis of the intermediacy of women. It investigates the importance of women as social links between clans, villages, households and individuals and the importance of female symbols as mediators within the gender belief system. I argue that women and symbols of femaleness mediate not only between patrilineal, virilocal groups, but, ultimately, between the social and divine orders of the Tamang and the Sherpa.

The thesis suggests some refinement upon anthropological understanding about the relation of gender symbolism to women and men. In the two ethnographic cases female gender symbolism makes important statements about the integration of both women and men into their worlds, both sacred and profane. Such gender symbolism is not an iconographic map of dualistic, mutually exclusive, sex-specific universes. The interconnections between abstract concepts of gender, cultural representations of sex-appropriate stereotypes, and the actual options for social, economic and ritual action constitute the heart of this thesis.
The organizational structure of this dissertation, however, does not exactly replicate the structure of its central argument. The first section outlines the ethnographic comparability of the two ethnic groups in Nepal. In particular, the second chapter looks at the similarities of Tamang and Sherpa society and culture, focusing upon their shared interpretation of reciprocal exchange. The third chapter explores the differences between Sherpa and Tamang. It shows how their similar social and religious structures have emerged somewhat distinct in each of the two contemporary groups. The Sherpa social emphasis upon the autonomous nuclear household and individual is reflected in the ascendancy of monastic Buddhism in the Sherpa regions. Among Tamangs, a variety of social groups based upon clan, kin, marital, community and domestic organization remain active, as does shamanic tradition.

The concluding section discusses the theoretical implications of my findings. It examines existing models of sex and gender and proposes a revised model. This model explicitly introduces an element of "overlap": between concepts of femaleness and maleness, in relation to ideas about women's and men's place in an ideal world and the relations between sexes in the real world. It allows all these relations to be represented more realistically and intricately than is immediately apparent in existing representations of mutually exclusive sex and gender.

*MATHEMA, S. B.
— M.A., Australian National University (Canberra), 1977.
— Title: Development of Hill Farming in Nepal: With Special Reference to Tanahu District

*MISHRA, Ram Chandra
— Title: The Development and Evaluation of a Peasant Farm Management Game - A Tool in Extension-Education in Nepal and Other Underdeveloped Countries

*PACHICO, Douglas Henry
— DAI 41, 1 (July 1980), p. 335-A
— Order No. 8015722
— Title: Small Farmer Decision Making: An Economic Analysis of Three Farming Systems in the Hills of Nepal

This study explores the potential for improving agricultural productivity and raising the incomes of small farmers by developing new technologies or by investing in the skills of farmers to increase their efficiency of decision making. The middle hills of Nepal provide a highly heterogeneous environment from economic, cultural, and natural resource perspectives. In order to make the results of this study more representative of the diversity prevailing in the hills of Nepal, data were gathered from a systematic random sample of 332 farms in three distinct situations including a mid-altitude valley at 4,800 feet
that is well served by economic infrastructure; a ridge environment at 6,000 feet where infrastructure is poor; and a sub-tropical valley at 3,200 feet.

The decision making of small farmers is examined in this study both through marginal analysis in a production function framework and also through the consideration of how farmers make particular choices among currently available enterprises. Farmer evaluations of alternative technologies were obtained from a sub-sample of key informant farmers on such topics as labor requirements, suitability to soil and moisture conditions, price of output and susceptibility to damage from pests. Enterprises are also compared by observing the present patterns of use among farms of different resource bases and through partial budgeting.

This analysis indicates that in all three farming systems farmers adopt new technologies where their characteristics are compatible with the specific needs of farmers. For example, in the mid-altitude valley there is a high rate of use of a labor intensive, high yielding nitrogen responsive coarse rice, but a very low rate of use of a high yielding nitrogen responsive maize variety which reduces yields of millet that is commonly intercropped with maize. On the other hand, in the sub-tropical valley most farmers use the high yielding maize variety while none use the labor intensive rice.

Moreover, within a particular farming environment, the technologies used on farms of different resource endowments are found to differ even when farms of less than half a hectare are compared with farms in the range of one to three hectares. Thus, the diversity of types of technology found to be suitable for farms of different sizes in the different environments in this study, emphasizes the need for detailed micro studies of current farm practices in order to focus the attention of agricultural scientists on the development of technologies that can be integrated into the farming systems of particular groups of farmers.

To examine whether investments in human capital can improve farmer decision making, a model was constructed that estimates the impact of numeracy and knowledge of modern agricultural technologies on allocative and techno-allocative efficiency. Allocative efficiency is the ability to equate marginal value products of resources among competing uses and techno-allocative efficiency is the ability to equate the marginal value product of resources with marginal cost. The model utilized in this study, comprised of production functions and input demand functions, introduces the capacity to estimate allocative and techno-allocative efficiency in the use of individual inputs. The empirical results indicate that while farmers' behavior is fairly consistent with efficiency, human capital can make a small but statistically significant contribution to efficiency.

Since there is evidently little scope for increasing output by improving the efficiency of management of presently available resources, this study concentrates on characterizing what currently constitutes appropriate technologies for different groups of farmers in order to identify priorities for investment in agricultural research.
Problem. The purposes of the study were: (1) to determine if caste has any effect on middle caste level teachers' expectation biases towards the students' academic performances; (2) to determine differences by region, i.e., developed Kathmandu versus less developed rural regions, of teacher expectation biases towards students' academic performances, which are based on students' castes; and (3) to throw light on the historical development of educational opportunity and hereditary social structures in Nepal. The National Education System Plan aimed to provide equal educational opportunity to students of all castes throughout the country, but the legacy of traditional institutions like the caste system could hamper the achievement of equal opportunity programs. Thus research is required on the effects of caste on teacher expectation biases in Nepal.

Procedures. This study adopted an experimental approach involving a Multi-Factor Analysis of Variance with a Repeated Measures design. The study samples consisted of 60 middle aged male high school teachers with Bachelors degrees, of whom 30 were from Kathmandu and 30 from outside of Kathmandu. To compare the means of the different levels of the three main variables of caste, region, and teacher expectation biases, a $2 \times 3 \times 2$ ANOVA with repeated measures was performed. Moreover, the Newman-Keuls Multiple range Test was used for specific comparisons. "Teacher expectation biases," as defined by Brophy and Good, was the construct chosen to indicate the impact of caste on teachers. Three pairs of essays written by high school students, each pair having one essay identified by caste and the other without caste identification, were the instruments used. Equivalence of essays was determined by a jury of 5 qualified teachers. A review of selected literature on teacher expectations and historical background of educational opportunity and social structures in Nepal provided the conceptual framework for the study of relationships between sociological factors and teacher expectation biases in Nepal.

Selected Findings. (1) Middle caste teachers' perceptions of students' castes significantly affected teachers' expectation biases towards students' academic performances. While middle caste level teachers showed high expectations of high caste students, low expectations of low caste students were not demonstrated by the difference between the scores given to essays with caste identification and without caste identification. (2) Regional development in Kathmandu did not significantly affect teacher expectation biases with respect to caste.

Selected Conclusions. (1) Middle caste level teachers showed high expectation biases towards high caste students. (2) Middle caste level teachers did not have low expectations of low caste students. (3) Urbanization in Kathmandu did not affect teacher expectation biases in terms of caste. (4) Belief in academic superiority of Brahmans appears to be entrenched in the minds of middle caste level teachers.
Recommendations. (1) Teachers in general, and teacher trainees at the Institute of Education campuses in particular, should be made aware of the findings that teachers are positively disposed towards high caste students which militates against the NESP's goal of equal educational opportunity. (2) The study should be replicated with samples of high caste and low caste teachers of primary and lower secondary schools of Nepal. (3) Courses on sociology and anthropology of education should be introduced into the academic program of the Institute of Education so that trainees can study sociological and cultural factors relevant to the development of education in Nepal.

*SCHAAF, Carl Dietrich
— DAI 39, 10 (April 1979), p. 4670-B
— Order No. 7907395
— Title: Population Size and Structure and Habitat Relations of the Barasingha (Cervus D. Duvauceli) in Sukla Phanta Wildlife Reserve, Nepal

Population organization and habitat relations of the barasingha (Cervus d. duvauceli) were studied between April 1974 and May 1976 in Sukla Phanta Wildlife Reserve, Nepal.

Total population counts in March when barasingha were most concentrated on southern grasslands in the reserve yielded 805 animals in 1975 and 980 in 1976. Aerial surveys confirmed barasingha distribution, and showed that they frequented Indian territory bordering the reserve before human settlement began there in 1975. Fecal-pellet counts in March 1976 gave estimates of 1,295 barasingha, 273 hog deer (Axis porcinus) and 341 chital (Axis axis). For barasingha, this was an estimate of maximum population size because they were concentrated on the grasslands. Hog deer and chital numbers represented only the grassland populations, since both species were more widespread in March.

The population comprised 16.4-32.7% stags, 35.2-48.6% hinds, 7.1-16.1% yearlings and 9.2-7.7% fawns. An apparent 12.8% increase in minimum population occurred in 1975-1976. The large proportion of hinds indicated that potential population increase was greater than observed. Comparison with Kanha National Park barasingha data suggested that mortality and not poor breeding success caused the low increase. The population before 1968 and 1972, when flash floods drowned many animals, reportedly was larger than that observed in 1975-1976. Habitat thus may be available to support more barasingha before carrying capacity is reached, and further population increases can be expected. Habitat surveys during the year indicated that barasingha remained mostly on dry grasslands while forests and savannas were avoided or used to an intermediate degree. Hog deer showed greater preference for seasonally-wet grassland, while chital mostly frequented forests and savannas. Fecal-pellet distributions indicated that lowland grasslands savannas were frequented similarly by the three deer during the pre-monsoon season, when environmental conditions and young forage grasses caused habitat preferences to be less defined.

The grasses Imperata cylindrica, Narenga porphyrocoma, Phragmites karka, Saccharum bengalense and Saccharum spontaneum were eaten by barasingha.
The relative abundance of these species on the southern grasslands, and availability of water there during the dry season, influenced habitat selection.

"Increaser" plant species found on village grazing grounds were absent on southern reserve grasslands, despite local heavy grazing by livestock. A high water table promoted grass growth, helping to maintain carrying capacity even during the dry season, while flooding, water-logged soils and fire maintained grassland habitats.

Barasingha avoided livestock on southeastern reserve grasslands during the pre-monsoon season. As livestock grazing declined there annually, drinking water and fresh grass attracted barasingha to the areas vacated. Elimination of livestock from these grasslands will free additional habitat for deer.

Aside from the annual congregation of the largest herds in March, barasingha in Sukla Phanta moved little in response to seasonal change. Some 32 km² of lowland grassland, savanna and marsh supported the population year-round. Future increases in barasingha numbers in less-preferred habitats could indicate disturbance on the southern grasslands, or that carrying capacity there had been exceeded.

Recommendations for barasingha conservation include continued annual population counters and investigation of additional specified research questions. Disturbance in the form of grass-cutting and gathering in the reserve should be eliminated. Reestablishment or introduction of barasingha into other reserves should be considered. An international reserve to include Sukla Phanta and 10 km² of adjacent Indian territory is proposed.

*SHARMA, Tara Nath

— DAI 41, 5 (November 1980), p. 2091/2-A
— Order No. 8018138
— Title: The Auxiliary in Nepali

This study analyzes the auxiliary in Nepali which is an Indo-European language spoken mostly in Nepal, on the theoretical approach that all the helping verbs and modals are main verbs to begin with. Due to the aberrant morphological shapes and behavior of the English modals, there is a general tendency among linguists to treat the auxiliaries as different from the main verbs. But the assumption that the auxiliary is a separate category does not seem to be accurate in the case of Nepali and other South Asian languages.

Chapter II presents a complete morphophonemic analysis of the Nepali verbal constellation. The verbal complex in Nepali consists of the combination of a stem or stems, followed by aspectual markers, the helping BE, tense markers, negative marker, and finally concord suffixes. In all finite verbal configurations a meaning carrying verbal stem and at least a concord suffix are obligatory. All other constituents in a Nepali verbal structure are optional.
A thorough investigation of the multidimensional Nepali BE is incorporated in Chapter III. The verb BE in Nepali functions both as a main verb and as an auxiliary. As a main verb, it represents three semantic notions of identification/definition, existence/location, and universal truth with its three separate stem forms of ha-, cha-, and hu- respectively. The integrated nature of the polysemous Nepali verb BE is characterized not only by its copulative and locative uses, but also by the syntactic roles it plays as a helping verb in its cha- form, and as modals in all its three forms. As a modal, cha-, with its past stem form thi-, being inherently locative, connotes existence, possession, and inner urge, ha- shows presumption, and hu- signifies propriety and periphrastic honorificity.

Modals in Nepali, as in all South Asian languages, are compound verbals. The structure of such a combination is V(erb)1 + V(erb)2. All verbal stems can occupy V1 position, but only twenty verbs can occur as V2 in the structure, where V1 retains its semantic role and V2 loses most of its original lexical meaning and assumes some kind of modality. In the V1 + V2 construction the verbal stem which occupies V1 position occurs in four forms: (a) stem + i(absolutive); (b) stem + na(infinital); (c) stem + nu(infinital); (d) stem + ne(future participle). The V2, however, is conjugated in all its regular paradigms. There is an elaborate syntactic exploration and semantic interpretation of how these twenty verbs differ when employed as V1 and V2 in Chapter IV of this dissertation. As V1 they retain their lexical meaning intact, whereas they modify their meaning considerably to assume modality features as V2. But both as V1 appearing as single stems and as V2 following other stems, they are fully conjugated. Syntactically, V2 and single stem verbs behave the same way.

An areal pattern emerges in Chapter V where the Nepali auxiliary is examined side by side with the auxiliary in other representative South Asian languages like Indo-Aryan Hindi, Bengali, etc., Dravidian Telugu and Tamil, and Tibeto-Burman Newari. BE as a main verb in all these languages denotes identification, existence, and universal truth as in Nepali. Typologically, the existential BE used with the genitive and locative noun phrases signals the notion of having. The structure of V1 + V2 is an equally tenable representation of the South Asian model.

*SHARMA, Tika Nath
-- M.S., Northern Illinois University, 1976.
-- Title: A Study of the Most Frequently Used Words in Nepali Business and Government Correspondence in Nepal

The purpose of this study was to identify the vocabulary of business and government letters in the Nepali language. The words analyzed were obtained from a sample of 515 letters received from nine types of business and government organizations of Nepal. The words were translated into English and then keypunched in computer data cards. The ten words which occurred most frequently in Nepali business correspondence are ko, maa, le, yas, haru, patra, baat, a, huma, ra, and cha.

The final word list contained 36,585 running words and 2,430 unique words. The 25 most frequently used words in Nepali business letters were compared with
the 25 most frequently used words in American business letters. Prepositions and pronouns were most frequently used in both the languages. When the 25 most frequently used words in the Nepali business letters were compared with the 25 most frequently used words in the children's vocabulary of Nepal, it was found that verbs were common in the children's vocabulary and prepositions and pronouns were common in the business letters. The average length of a Nepali business letter was 71 words.

*SHRESTHA, Surendra Bahadur

— DAI 41, 5 (November 1980), p. 2280/1-A
— Order No. 8026703
— Title: Chinese and Indian Policies Toward Nepal: An Analysis of Political, Economic, and Security Issues, 1960-75

There are many studies viewing Nepal as a pawn in the Sino-Indian strategic game or as an appendage to Indian security and economic structures, though Nepal is one of the few Asian countries which was never colonized. On the other hand, there is a conspicuous lack of substantive research and publication viewing Nepal as a country striving for self-identity, independence, and economic prosperity. This study is an attempt to remedy the deficiency.

To view Nepal as an appendage of Indian security and economic structure is in conformity with the traditional Indo-Nepalese relationship which was passed on to free India by the British colonial government (of India). For a holder of this view, today's Nepal might appear as a dissident state vis-a-vis India. However, for a person seeing Nepal as one of the new emerging states, India's reassertion of the traditional Indo-Nepalese relationship would appear as an attempt to make Nepal's independence and self-identity contingent upon Indian security and economic interests. The fundamental conflict of these views and China's Nepal policy and its impact on the Indo-Nepalese relationship are the principal focus of this study.

This study is based on descriptive analysis and the approach can be called issue-structure-environmental approach in which the general environment is described and major issues are identified and analyzed. While analyzing an issue, the nature of its internal structure and functions of its linkages with other issues are emphasized.

Major findings. Despite much rhetoric concerning Chinese ideology and India's nonalignment policy, Chinese and Indian policies toward Nepal were primarily based on their respective national interests which appeared to be manifestations of situation, their leadership, and concrete interactions. The situation included history, geography, politics, economics, security, and available means which varied for China and India in relation to Nepal. Chinese and Indian leaders seemed to have based their Nepal policies on similar premises: a realistic equation of desired objectives with available means and without undue risks. Great variation in their available means and the volume of their interactions with Nepal are main determinants of differences in their Nepal policies.
China and Nepal. The relative stability and absence of conflict between China and Nepal are indicative of their complementary interests: a strong, independent, and nonaligned Nepal is complementary to Chinese security interests in Nepal and in South Asia in general.

India and Nepal. (a) India's assertion to retain and Nepal's attempt to change the traditional Indo-Nepalese relationship have been the primary source of their conflict, and (b) India's failure to view a strong, independent, and nonaligned Nepal as complimentary to her security and economic interests in Nepal appears to be another source of their dissension.

Nepal's Strategy. Although China and India often stated their intentions of not interfering in Nepalese internal affairs, Nepal will continue to exist as an unsafe and insecure nation unless and until she builds her own political and economic strength and reduces unilateral de facto dependence on India.

In an effort to put the complex Sino-Nepalese and Indo-Nepalese relationships in proper perspective and to provide a common concept for unifying various political groups in Nepal's international relations, this study comes up with a new concept: equal and proportionate relations. This new concept adequately reflects Nepalese ideals of non-discriminatory treatment and at the same time is realistic concerning Nepalese history, geography, economics, politics, and Nepal's current needs. Besides the ideals of "equal" treatment, the concept of "proportionate" reflects the variable proportions of interactions between Nepal and her neighbors and friends abroad. The concept of "proportionate" should be seen as dynamic to keep pace with changes in Nepal's current needs. Above all, the concept of "equal and proportionate relations" has the potential of unifying various political groups in Nepal under one common concept of Nepal's international relations. The concept is a synthesis of idealism (equality) and realism (proportionate).

*SHRESTHA, Vijaya

— Ph.D., Mississippi State University, 1980, 206 pp.
— DAI 41, 3 (September 1980), p. 1243-A
— Order No. 8021130
— Title: Community Leadership in Rural Nepal

It is believed that decentralization of government authority, delegation of substantive power to village panchayats, and introduction of development strategy that demands special types of leadership have resulted in change in leadership patterns of Nepali rural communities. The objectives of this study thus are: (1) to identify community leaders within two village panchayats (Hill and Tarai); (2) to compare community leaders in these two panchayats; (3) to compare the leaders and non-leaders in terms of various demographic and economic characteristics; (4) to determine leader's perceptions of community problems and development needs; (5) to describe leader's perceptions of their role and work method as community leaders; (6) to describe leader's form of involvement in various development programs and their patterns of social participation; (7) to determine leader's participation in leadership training; and (8) to describe non-leader's perceptions of leader roles, leadership method,
community problems, development needs, and their forms of involvement in various development programs.

Data for the present study were collected from two different sites, which are different socially, culturally, economically, and geographically. Community leaders are viewed as the formal and informal leaders. Information about community leadership was collected by using positional, and issue specific reputational approaches. In total, 92 leaders and 400 household heads were interviewed by means of structured interview schedule.

Data are analyzed by examining characteristics of leaders in the two panchayats. This phase of analysis is followed by comparisons of formal and informal leaders, migrant and non-migrant leaders in tarai, and differences between leaders and non-leaders. Demographic, economic, perceptual and behavioral characteristics are compared in the four analytical steps.

Our findings reveal that community leadership is the monopoly of male sex, who are economically better off, advanced in age and belong to upper castes. When leaders are distinguished between two panchayats, tarai leaders are found to be younger, more educated, own more land, and earn more income, than hill leaders. Likewise, formal and migrant leaders are younger in age, better educated, have smaller families, and belong to upper castes as compared to informal and non-migrant leaders. But no significant differences are noted in leaders with respect to their perceptions of development needs, their role, and work method. However, formal leaders and leaders in hill panchayat showed greater concern for development and change than informal leaders and leaders in tarai. Further, formal leaders, migrant leaders and leaders in hill panchayat are multiform contributors, averaged higher involvements and participated more in community activities than informal leaders, non-migrant leaders and leaders in tarai.

Except for caste and age leaders varied from non-leaders in every respect. But non-leaders are quite similar to leaders with respect to their perceptions of development needs and leader role. Non-leaders differed in their forms of involvement. Leader's involvement averaged higher than that of non-leaders.

The findings of our present study indicate that the change in the political structure and formulation of new rural development strategy have neither created a new pattern in community leadership nor completely dislodged those who had hitherto enjoyed power because of their better economic position, caste superiority, seniority in age, and ethnic majority. They have advantages in spite of changes in the polity and programs of the government.

Our data also suggest an unmistakable evidence of a trend toward the emergence of new patterns in community leadership structure. Varied socioeconomic background of leaders, presence of younger and higher educated leaders in substantial proportion in both the hill and tarai panchayats lead us to conclude that community leadership structure in rural Nepal is slowly but steadily changing into new patterns.
The movement and activities of tigers (*Panthera tigris tigris*) in Royal Chitawan National Park, Nepal, were studied using radiotelemetry. A total of seven tigers was radio-tracked for varying periods from December 1974 to September 1976.

Tigers were primarily nocturnal but their activity patterns did not appear to be controlled by the light-dark cycle. More likely activity patterns were controlled by the activity of the prey species, but modified by temperature and dietary circumstances.

Riverine forests and grassland habitats were preferred; tigers used these out of proportion to their availability. Based on availability, sal forest was used much less than expected. Differential use appears related to habitat components such as abundance and distribution of prey, cover, and water.

Linear distances between daily locations averaged 2.0 km with considerable variation among individuals. One adult male travelled significantly farther between daily locations than all other tigers. Actual distances travelled per day were estimated at 10-20 km. Tigers were located in a different place on consecutive days about 80 percent of records. Tigers had relatively stable, well delineated home ranges. Both sexes occupied exclusive ranges (territories), although males' ranges overlapped those of several females. Ranges varied in size from 60 km² (adult male) to 16-17 km² (adult females). Seasonally, ranges tended to be smaller in the wet season. The birth of young and their gradual maturation had a marked localizing effect on the movement of females. Occupancy of an area appears to be indicated by use (scent, visual marks). Residents visited most parts of their ranges at intervals of a few days to 2 weeks, and home ranges, or portions thereof, were only appropriated by other adults when areas ceased to be used.

Adult and independent subadult tigers were found to socialize infrequently with other tigers. Even among tigers with a large degree of home range overlap, individuals were commonly 2 to 5 km from each other. Adults of the opposite sex were rarely located together except during periods of suspected sexual activity.

The number of resident tigers in the Park in 1976 was estimated at 15; with a 4:1 sex ratio favoring females. The crude density of adults is one per 36 km². At the same time the number of dependent and independent offspring was estimated at 17. Reproduction in the Park is excellent; at some time during this study most females had young. The mortality rate of young in the first 2 years of life is about 50 percent.

Data on killing techniques suggest that when the ratio of prey weight:tiger weight exceeds 0.5 the tiger uses the throat bite to kill. Most of the prey killed
by tigers weighed 50-100 kg, but animals weighing 400 kg were also taken. Deer species occurred in about 76 percent of tiger feces and 66 percent of kills. Sambar (Cervus unicolor) apparently are preferred prey and/or they are more vulnerable, being taken out of proportion to their availability. In addition to the young and old, healthy, prime animals were also killed. Females made a kill about every 8 to 8.5 days, or 40-50 kills per year. The average length of time spent with kills was 3 days, during which a tiger consumed an average of 46 kg. The amount of meat consumed per year is an estimated 1840-2300 kg per tiger; however only about 70 percent of a carcass is edible so tigers have to kill about 2629-3286 kg per year.

*SUVEDI, Purushottam Sharma*

— Ph.D., University of Southern California, 1977
— DAI 40, 11 (May 1980), pp. 6005/6006-A
— No order number indicated; order by name, author, and date
— Title: Organizational Change and Employee-Attitudes in Nepal: A Behavioral Study

A subject of organizational change has received increasing attention in recent years in all countries, developed or developing. The Kingdom of Nepal is a developing nation. Since a major reform in 1951, governmental reorganization has been a continuous process. Six years ago, HMG proposed a position classification plan to replace its mainly rank-oriented personnel system. In spite of many efforts, this plan has not been possible to implement. Many appraisals and comments have been made of the proposal, however, a clear cut opinion among employees was not found. Therefore, the author felt a need for research in this area and made it the focus of the dissertation.

The purpose of this study, then, was to examine how different groups of public employees in Nepal perceive and express their reactions and attitudes toward the proposal. The following research questions were set forth: What relationship exists between self-actualizing and supporting attitudes of different occupational groups of public employees toward the proposal for organizational change? What relationship exists between demographic characteristics of different groups of public employees and their perceptions and attitudes toward the proposal for organizational change?

The theoretical orientation which guided this study postulates a relationship between attitudinal variables of different occupation groups of public employees: the greater the self-actualizing attitudes of employees, the higher the supporting attitudes for the government proposal, and the better the prospect for effective organizational change, and vice versa. It was also hypothesized that employee-demographic factors, as well as occupation, would heavily influence perceptions and attitudes. Variables and hypotheses were set forth for statistical tests within an ex post facto research design.

Based on a simple random sample 100 subjects from gazetted officers were selected. The only sources of data were answers in a questionnaire which included a scale of self-actualizing and supporting attitudes. A survey question was also included to examine general attitudes towards the proposal itself.
Altogether, nine statistical tests, four parametric and five non-parametric, were conducted. The research hypotheses were supported in seven cases at the .01 level and in one case at the .05 level. One null hypothesis was found tenable.

This study demonstrates that occupations of public employees are associated with self-actualizing and supporting attitudes toward the proposal for change. Likewise, marital status and level of education were found to reflect differences in employee-attitudes; sex and age were found moderate significant and low-moderate non-significant factors, respectively.

The test results and data supported the hypothesis that there is significant correlation between self-actualizing and supporting attitudes of public employees. For the administrative group a Pearson r=.749 shows that in more than 56% of the cases these two variables go together; in less than 44% of cases they are independent of each other. For the technical group, an r=.650 shows the shared and non-shared variances of about 42% and 58% respectively. The t-test shows that the administrative group is higher in both self-actualizing and supporting attitudes than the technical group.

A number of conclusions can be drawn. In sum, 47% and 37% of respondents were found for and against the proposal, respectively; 16% were undecided. This means there are proactive and reactive forces for and against it as well as some neutral ones. In such a situation, if this plan is implemented it may result in a reactive change. Therefore, a modified form of position classification with a synthetic approach is suggested. In order to make it a proactive, people-oriented incremental change, new programs for training and development are recommended so that employee-attitudes and behaviors could be modified. This may help to introduce major organizational change in order to cope with the changing society and environment.

*UPRETI, Nayantara Sharma
— Ph.D., University of Wisconsin, Madison, 1979, 192 pp.
— DAI 40, 6 (December 1979), p. 3563-A
— Order No. 7921588

The three-fold purpose of this study is to: (1) identify prevailing child bearing and rearing rituals in Nepal, (2) suggest implications of these rituals for nursing practice, and (3) generate possible hypotheses for future study.

The family support system was studied through an examination of the child bearing and rearing rituals among the Brahmins, Chhetris, Newars and other tribal groups of Kathmandu, Nepal. Because very little has been studied of the positive functions of ritual and health maintenance in general, this research endeavor has been essentially exploratory and inductive.

The method of data collection was participant-observation. A total of 240 subjects were interviewed—60 in each of the four caste groups—to assess any similarity and variation in the prevailing child bearing and rearing rituals. The
same subjects were also categorized generationally. Three generations were interviewed in order to compare possible changes in rituals over time.

The prevailing maternal and infant care rituals were identified. Findings of this study suggest that rituals enhance the expectant and new mother's as well as the family's coping ability in dealing with the demands of child bearing and child rearing responsibilities. This is true for meeting both the physiological and psychological needs of the fetus, infant, mother and the family as a whole. Thus, the study in general suggests that Nepalese child bearing and rearing rituals are health promoting.

The description of these rituals contributes additional information to Malinowski and Radcliffe-Brown's theory of the relation between anxiety and ritual. Once these rituals are viewed as having health promoting characteristics, implications of these rituals for nursing practice is suggested. Though positive consequences of rituals are emphasized, the possibilities of negative consequences are also set forth. Knowledge of the child bearing and rearing rituals and their functional and dysfunctional consequences can be useful for nurses. A number of possible hypotheses are presented for future research.

*WALKER, David Addison*

- Ed.D., University of Massachusetts, 1979, 392 pp.
- DAI 40, 10 (April 1980), pp. 5382/5383-A
- Order No. 8004999
- Title: Understanding Pictures: A Study in the Design of Appropriate Visual Materials for Education in Developing Countries

The human resources approach to national development has challenged educators to find ways of communicating with village people that do not rely on the written word. Pictures are being used increasingly as a way to deliver messages to illiterate groups. Recent cross-cultural research has shown, however, that many of the assumptions made about the kinds of information that can be delivered through pictures need to be re-examined.

Part I of the study examines two current approaches to the problem of picture perception. The "constructive" theory maintains that pictures are inherently ambiguous and require active interpretation on the part of the viewer. The "registration" theory suggests that pictures give information which derives from the ecology of light. In this view the recognition of graphic depictions is considered to be a fairly passive matter and a gift allowed us by the environment. The evidence of cross-cultural research in picture perception which gives support to each of these positions is reviewed.

Part I also discusses cross-cultural studies of intelligence and examines a body of literature which demonstrates that the intellectual demands of village life are often such that they do not stimulate some of the higher cognitive processes identified by Piaget. The author takes the position advanced by Piaget and Vygotsky that the development of conceptual awareness advances from an intuitive level to one of conscious understanding. Bruner's thesis concerning three modes of learning is also discussed. The traditional modes of
learning in village settings are enactive (learning by doing) and iconic (learning by modeling). Symbolic learning, which is learning by being told, usually takes place out of the context of ongoing action and, as such, is a radical departure from traditional practice. Like written language, pictures provide a form of symbolically coded experience, and in many cases the learner must be consciously aware of the cues of pictorial expression and how they are used in order to properly decode their meaning.

Part II details an empirical study carried out in Nepal with four samples of adult subjects: villagers with no schooling, villagers with some primary or secondary schooling, workers in a furniture factory in the capital city of Kathmandu, and students at Tribhuvan University's Institute of Engineering. A series of sixteen experiments was carried out. The abilities tested were the recognition of depicted objects, the understanding of spatial relationships in concrete situations, and the comprehension of pictorial space. The recognition of familiar objects in pictures was found to be a great deal easier than the comprehension of pictorial space. The village samples showed a generally poor understanding of euclidean and projective relationships both with regard to real objects and in interpreting pictures. On the other hand, topological relationships in pictures were easily grasped.

The author concludes that perspective information was understood at only an intuitive level by the majority of the villagers tested and could not be consciously applied to the interpretation of spatial relationships in pictures. Projective information was consistently interpreted topologically by most of the village subjects. The author suggests that the recognition of familiar objects in pictures is largely an ability which does not require special learning but that the interpretation of pictural space is an active process which calls for conscious awareness of projective principles. Recommendations for the design of visual materials for use in nonformal educational settings are made.

*WINKLER, Walter Frank

--- Ph.D., University of Wisconsin, Madison, 1979, 397 pp.
--- DAI 40, 12 (June 1980), p. 6340-A
--- Order No. 8008851
--- Title: The Evolution of Caste Organization in a Subregion of Far Western Nepal

This research defines the historically expressed symbolic and thematic elements of caste organization in a subregion of Far Western Nepal. The analysis of these elements utilizes oral historical accounts. These accounts are analyzed with respect to the framework they give to the development of caste organization within the subregion and the authority and status relationships they express within it. This framework focuses on the Thakuri caste of hereditary rulers of the "little kingdom" which forms the subregion.

Preliminary to this analysis, the physical, cultural, and historical characteristics of the subregion and the region of which it is part are defined. In addition the theoretical perspectives suggested by several previous studies are developed. First, the subregion defined by its ancestry as a "little kingdom" is employed as the central unit of analysis. Second, symbolic and thematic elements are analyzed as to their expression of a regional configuration (varna

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model) of caste organization. Third, this model is considered as the product of acculturative interaction among immigrant groups.

Thakuri authority and Thakuri centered caste relationships are defined through four primary domains of meaning. These domains consist of (1) the depiction of the establishment of the Thakuri lineage within the subregion, (2) the deification of the Thakuri lineage founder and the function of this workshop as a focus of status relationships, (3) the definition of Thakuri political authority, and (4) the definition of Thakuri status by criteria of descent, marriage, and agrarian practice. Each of these domains consists in turn of subdomains and foci of historically defined symbolic and thematic elements. Following the definition of each domain, a comparison is made between the processes and structural relationships revealed in its analysis and those of related studies.

The resulting analyses define important issues in the definition of the caste organization in the subregion. The first of these is the relationship of ancestral accounts and myths to the elaboration of caste organization within the subregion and the effect on this development of the characteristics of indigenous culture. The second concerns the definition of the process of deification of the Thakuri lineage founder and the relationships that circumscribe the deity's incorporation into the pantheon and worship within the subregion. A third issue involves the analysis of Thakuri political authority in terms of a process of "Rajputization" and in terms of the political dynamics of the "little kingdom." A fourth issue considers the Thakuri lineage with respect to a model of the evolution of clan and lineage organization in North India. In addition it compares the significance of the criteria of Thakuri caste membership to those defining the non-Thakuri castes.

In its conclusion the research organizes the features of the four domains into a configuration of caste organization for the subregion and region. This model is compared to models of caste organization which have been suggested for the neighboring Indian Himalayan region and the adjacent region of Nepal. Overall these comparisons emphasize the importance of a re-evaluation in Nepal of assumptions in regard to the historical setting of the acculturation of caste groups and underscore the importance of regional forms of caste organizations.

*YADAV, Ramawatar*

— Ph.D., University of Kansas, 1979, 226 pp.
— DAI 41, 1 (July 1980), p. 232-A
— Order No. 8014443
— Title: Maithili Phonetics and Phonology

This dissertation is the first full-length phonetic study of Maithili—an Indo-Aryan language spoken in Nepal and India. The study is based entirely on the pronunciation of the author who is a native speaker of Maithili and was born in the village of Muriba, near the town of Janakpur, in the tarai of Nepal. The experimental methods used in this study are mainly acoustic and fiberoptic in nature.

The study is divided into five chapters. Chapter 1 provides pertinent background information on the Maithili language and the area where it is
spoken, and discusses such issues as the important linguistic works on Maithili, the earliest written text of Maithili, and the genetic affiliation of Maithili with the rest of the modern Indo-Aryan languages of India and Nepal.

Chapter 2 provides a brief description of Maithili vowels, consonants and clusters and their phonemic analysis, a distinctive feature analysis of Maithili phonemes, and a list of some tentative segment structure conditions.

Chapter 3 describes the fiberoptic and acoustic studies of aspiration and voicing in Maithili. The fiberoptic study was made to investigate the temporal course and width of the glottis during the production of four types of Maithili consonants in initial, medial and final positions. The results show that the voice-voiceless distinction correlates with the adduction-abduction gesture of the larynx. The study concludes that glottal width is the key physiological correlate of aspiration. The study also suggests that sounds which are produced by a combination of vibrating vocal cords and aspiration should, in fact, be called "voiced aspirated" consonants.

Chapter 4 describes the Maithili oral and nasalized vowels in terms of their chief acoustic properties and provides information on: (i) the frequency of each of the three formants (F₁, F₂ and F₃) for all oral and nasalized vowels; (ii) the duration of each of the oral and nasalized vowels; (iii) the effect of consonant aspiration on vowel duration; (iv) the effect of nasalization on vowel formants; (v) the differences between the acoustic properties of oral and nasalized vowels.

Chapter 5 discusses word stress in Maithili and investigates three acoustic parameters (fundamental frequency, relative intensity and duration) in detail. The results show that of the three parameters, duration appears to be the single most important cue. Since relative intensity in itself is not an adequate cue to stress in Maithili, a combination of duration and fundamental frequency, or of all three acoustic features (duration, fundamental frequency and relative intensity in that order) collectively, may be associated with what might be termed "stress" in Maithili.
Two major new works are now available on the subject of women in South Asia and the Himalayas, including Nepal. They are the very large volume entitled *Women of South Asia: A Guide to Resources*, edited by Carol Sakala, and the three volume series entitled *The Status of Women in Nepal*, part of a project directed by Madhukar Shumshere J. B. Rana. As of this writing, the Sakala volume has been out for approximately one year, but the CEDA volumes from Nepal are still being published.

Carol Sakala's large and annotated bibliography on *Women of South Asia* is the most comprehensive guide to resources on women in India, Sri Lanka, Bangladesh, Pakistan, and Nepal. It was sponsored by the Committee on the Status of Women in Asian Studies of the Association for Asian Studies. The book covers a wide range of topics, and the full scope of time and includes both published sources as well as reference to related libraries, archives, and other local resources on women.

Part I, on published resources, begins with a long section on various perspectives on women unbounded by time and space. Sub-headings here include key reference works, bibliographies, biographies, historical interpretations of the position of women, major religious traditions about women, manifestations of the feminine in South Asian philosophy, theology and social structure, including the Goddess tradition and matrilineal systems, the women's life cycle, women's power and sexuality, spiritual life and religious observances, economic position, dress and adornment, and artistic traditions. Part II breaks down some of the same topics as above into discrete blocks of time, including the roots of Hindu tradition, Vedic and early Tamil tradition, bhakti and shakta traditions, and women in the modern period.

Regional specialists will be interested in that section of the book which covers topics of women in the Indic cultural region, South India, West India, Lowland East India, Bangladesh, and North/Central India--the area of Hindi-Urdu, Central Pahari and eastern Panjabi languages. This latter section includes a sub-section on "Nepal/high Himalayan cultural region: area of Nepali and northern Tibeto-Burman languages" (pp. 411-417, 4515-4583).
The Himalayan and Nepalese section breaks down into the following categories:

1. General statements: (a) Ethnographic contexts, (b) Collected papers and a photo essay.
2. The life cycle: (a) Rodi, Gurung youth associations, (b) Courtship and marriage, and (c) Fertility and motherhood.
3. Domestic sphere and family life: (a) Overviews, marriage stability, family relationships, and (b) Property rites.
4. Sexuality, witchcraft.
5. The spiritual life and religious observances: (a) Ascetic communities, (b) A women's festival, Tija/Rsi Pancami, (c) Kumari worship, deviki tradition, and (d) Goddesses, Newar tantrika traditions.
6. Education.
8. Political participation: Queens Ratna and Aishwarya
9. Arts: Children's drawings of man, woman and self
10. Western women in the Himalayas
11. Mountaineering: (a) Mrs. Bullock Workman, (b) others.

This section on the Himalayan woman is short, in part because of the dearth of materials available and in part, I suspect, because of the obscurity of many titles. It is encouraging, however, to note that since this bibliography was published, a number of other works focusing on women have appeared—from mountaineering exploits of women's expeditions, to a series of anthropological and sociological monographs on the Status of Women in Nepal.

The Status of Women in Nepal project was supported by the Nepal Government and the U.S. Agency for International Development, and is being published through CEDA, the Centre for Economic Development and Administration at Tribhuvan University, Kathmandu. As of this writing, only part of its volumes and numbers are available, but the others are in press. The work includes three major parts: Volume 1, entitled "Background Reports on the Status of Women in Nepal" has five parts, and is devoted to the collection and analysis of available secondary data on Nepalese women in such areas as statistical profile, institutions, legal status, development and planning, and an annotated bibliography. The bibliography (Volume 1, Number 4) includes sections on economy, education, anthropological studies, law, health and population, and general studies. Altogether this bibliography lists 223 entries dealing expressly with women in Nepal. (The Sakala volume, above, lists 63 entries on women throughout the Himalayan region.) It is unfortunate that the longer list of entries was not available for the Sakala volume where it would receive wider and more diversified readership.

The second volume of the Status of Women in Nepal project includes a series of eight ethnographies, based on village studies, in various parts of Nepal. These monographs reportedly will have both in-depth anthropological and quantitative survey data, dealing with women's economic roles and statuses both within the family unit and in the wider social context. In addition, an important part of the ethnographies is a Time Allocation Study, detailing the daily activities of all household members within each village sample. This alone should be of considerable interest and should generate new conceptions of women's activities in time and place in the daily routine. The ethnographies cover both ethnic and caste groups.
Volume 3 of the series will serve to synthesize the findings of volumes one and two into a draft for a "National Plan of Action for Women" in Nepal. This work marks the important transition between research and action, a major purpose for the overall project. It is the hope of the funding agencies, the editors, and the authors of the series that the national plan of action will serve to stimulate the formation of a coherent national policy on women and provide a basis for the eventual development of specific action programs for rural Nepalese women.

Both of these important compendiums regarding women are very welcome additions to the South Asian literature, and are essential resource materials for regional specialists and libraries.

*Nepali Grammar*

Verma, M. K. and T. N. Sharma  
1979 Intermediate Nepali. Volume 1 - Structure, Volume 2 - Reader  

Review by: Donald A. Messerschmidt  
Anthropology Department, Washington State University, Pullman, WA 99164 USA

This two-volume set is a welcome addition to the growing literature on the Nepali language, and is especially useful as a teaching aid for learning the language beyond the first year. This set is designed for students who have already completed the equivalent of a first-year of introductory course, and who are proficient in reading Devanagari script. The two volumes are available with tapes and workbooks and designed to be used together so that students can attain fluency in reading and writing and at the same time be aware of the pertinent grammatical constructions underlying what they read. Each lesson in the Structure volume is accompanied by pattern drills and exercises for intensive practice and each lesson in the Reader volume has a glossary with structural and relevant cultural explanations. In addition, a comprehensive vocabulary list appears at the end of the Reader volume, arranged alphabetically (Devanagari standard) for easy access.

These books were funded by a grant from the U.S. Office of Education. As of this writing, sale arrangements were not complete with the Indian publisher, hence a price on the main volumes is unavailable. Interested persons should inquire at the University of Wisconsin's Department of South Asian Studies, 1242 Van Hise Hall, Madison, Wisconsin 53706. The tapes (approximately $7.50 per cassette) are available from the University of Wisconsin, Labs for Recorded Instruction, 279 Van Hise Hall, Madison, Wisconsin 53706. The workbooks, also available from the South Asian Studies Department, cost $3.50 each (there is one workbook for each volume).
The seventies saw an unprecedented growth in demography research in Nepal. Individuals and organizations, both Nepalese and foreign, have increasingly focused their attention on population issues and demographic aspects of development problems. The monograph under review, Population of Nepal, is an instance of this. It is a collection of articles, including some already published ones, by more than a dozen Nepalese policy-makers and/or researchers from various organizations. The content of the volume can be broadly divided into two categories: One set of articles reviews the levels and differentials of fertility and mortality, nuptiality patterns as well as the size and composition of the population; the second set of articles treats socio-cultural and economic aspects such as religion, ethnic composition, health, education, and employment. Attempts are made also to shed light on ecological and regional variations.

The data sources for most studies included are the recent censuses of the country. In the absence of a national vital registration system— it was only in 1977 that a vital registration system was introduced in some parts of the country—vital statistics are derived from the census data through the use of demographic indirect estimation techniques. Over forty percent of the Nepalese population is under age 15 while median age is just under 25 (pp. 29), and the birth rate remains high. The fertility and mortality estimates obtained through the application of different methods essentially tell the same story: The Nepalese demographic transition scenario is one in which fertility remains very high and mortality, though still high, gradually declines (Chapters V and VI). Several projections suggest that absolute size of the population will at least double—reaching over twenty million by the end of the century—under any plausible regimes of fertility and mortality (Chapter VIII).

A comprehensive survey of the existing laws relating to family formation, marriage, sexual conduct, inheritance, and succession is provided (Chapter XIII). This is helpful in understanding how certain laws may restrict or stimulate population growth under different conditions. In spite of a considerable increase in school enrollment, sex differentials in educational opportunities and in employment and occupational structures are high (Chapters X and XI). Despite the high priority attached to agricultural development in the various development plans, "food grain products increased only at about 1.0 percent, half the rate of increase in population" during the decade (pp. 7). The country experienced a decline in food supply per capita during the seventies. More than two-thirds of the population of children were found malnourished (pp. 107–8). Infective and parasitic diseases continue to be the most prevalent form of morbidity (pp. 106–7), while the country joined the rank of "small-pox free" nations in the late seventies.
It is disappointing, however, to note that none of the chapters in the volume deals specifically with the important phenomena of migration and urbanization, except for occasional reference to it. This omission is conspicuous particularly in view of its relevance to Nepal as evidenced by the fact that most of the policies envisaged to regulate population growth during the 1975-80 development plan period are directly related to migration and urbanization (cf. National Planning Commission, The Fifth Plan, 1975-80, Kathmandu: National Planning Secretariat, pp. 42-3. In Nepali). Apart from this there are few other printing problems and some tables with missing indicators. These deficiencies do not, however, undermine the usefulness of the present volume. Researchers interested in the population of Nepal will find the monograph a useful reference.