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II. PAPER ABSTRACTS

*ABSTRACTS OF PAPERS FROM THE 14th ANNUAL CONFERENCE ON SOUTH ASIA, University of Wisconsin-Madison, November 1-3, 1985

ALLEN, MICHAEL, The University of Sydney, Marriage and the Status of Newar Women (Panel: The South Asian Landscape: A Series of Selected Recent Research Topics).

In this paper I examine Newar marriage arrangements and their implications for the status of women as wives, mothers, and daughters. Three main bodies of data are examined -- the caste status of spouses (i.e. whether marriages are hypergamous, anaganous or isogamous), marriage rituals, including the mock-marriage of young pre-pubertal girls to a Hindu god, and post-marital customs concerning divorce, the status of widows and the property rights of women.

AMATYA, RAMESH, University of Southern California, Comparative Analysis of the Transition to Deliberate Fertility Control in Nepal, Pakistan, Bangladesh and Sri Lanka (Panel: The South Asian Landscape: A Series of Recent Research Topics).

The paper examines the factors causing demographic transition as a shift from natural fertility to deliberately controlled fertility, as well as a change from high to low levels of fertility in Nepal, Pakistan, Bangladesh and Sri Lanka using world Fertility Survey Data. The theoretical perspectives for the analysis is the 'synthesis model' of fertility determination developed by Richard Easterlin and Eileen Crimmins. From empirical results the following hypothesis is tested: As modernization occurs and transition in deliberate fertility control eventually sets in, is the source of this transition a) increasing motivation for fertility control, b) declining regulation costs of fertility control, or both? The main finding is that the source of transition to deliberate fertility control is primarily due to increase in motivation for fertility control. The regulation costs turns out to be relatively weaker.

AYE TRULKU, LOBSANG NYIMA, New York City, A Review of Traditional Tibetan Polity (Panel: Traditional Tibetan Polity, 7: Traditional Tibet and the International Setting).

The title and subject matter of this paper are not intended to suggest that we have solved the problems of the analysis of the Tibetan polity. My review merely highlights some of the salient features to refresh our memories of our previous panels' discussions.

BAGCHI, DEIPICA, Southern Illinois University at Edwardsville, Women in Rural Energy Crisis in India (Panel: Two Aspects of Women's Status in India: Women & Work)

The paper investigates the nature and extent of domestic fuel crisis in India in light of its impact on rural households, and on women who must juggle their daily time schedules to meet the additional responsibilities of catering to household fuel requirements in a growing resource scarcity situation. The paper surveys the rural energy scene in India, examining alternative energy development plans and policies being instituted by the government. Also, the analysis focuses on the direct impact of deforestation and fuel crisis on rural households, particularly on women who must allow adjustments in work, cooking, leisure, nutrition, education, and income as a consequence of the acute resource scarcity; and on the fact that the current energy development plans scarcely seem to recognize this important component of the rural energy system. In conclusion, the paper attempts to direct attention to developmental facets of the energy problem relating to households that ought to be incorporated in the new energy plans.

BEACH, KING, Dept. of Development Psychology, CUNY Graduate Center, Himalayan Research in Psychology Applied to Education: Future Prospects (Panel: Himalayan Research in Psychology: Implications for Educational Development).

The emphasis upon controlling out factors which allow for intellectual flexibility, factors that might otherwise limit the generalizability and replicative ability of learning, is an orientation shared equally

by traditional psychological experimentation and formal education in the Himalayas. While learning displayed in school and on standard psychological tasks shares a common orientation, learning outside of school does not. Intellectual flexibility within culturally-defined boundaries best characterizes the pedagogical orientation of learning outside of school. As schooling is ultimately intended as preparatory learning for the everyday world, the usefulness of standard psychological tasks for understanding how to best facilitate preparatory learning in Nepal must be questioned. The paper proposes a reorientation of psychological research on learning from that shared with formal education to that of everyday life and work in Nepal. An understanding of culturally-bounded intellectual understanding and structuring learning in school. New research approaches combining experimental and ethnographic methods are discussed as part of this reorientation. The implications of psychological research following the intended societal relationship between learning in the everyday and in school will be explored with respect to educational development aims in Nepal.

CHHETRI, RAM BAHADUR, East-West Center, Honolulu, HI, Marriage and Family in a Himalayan Community: A Study among the Loba of Mustang, Nepal (Panel: The South Asian Landscape: A Series of Selected Recent Research Topics).

The Lo Region of Mustang, Nepal is distinct in terms of its geo-physical features as well as history, people and culture. This region, lying at the periphery of the Tibetan socio-cultural mainstream, presents an interesting anthropological setting. Until recently, the region was a gap in the anthropological map. The author spent about eight months there (1983-1984) as one of the researchers from the Research Center for Nepal and Asian Studies, Tribhuvan University, Nepal. In the present paper, some of the findings of anthropological research pertaining to marriage, family and kinship are discussed in relation to socio-economic factors and processes in the Loba society. The social life of the Lobas is characterized by stratification; their economy consists of a combination of agriculture, animal husbandry and trade; and in terms of marriage and family monogamy (with both virilocal and uxorilocal residence) and polyandry co-exist. An examination of the interrelationship among these social realities in Mustang provides a new insight into the Tibetan culture in Nepal. The strong social sanction against polygyny among the Lobas modifies the heretofore accepted view that wherever polyandry occurs polygyny co-occurs. The analysis of the concepts of marriage, family and kinship among the Lobas of Mustang might help to further our understanding in this regard in relation to the broader Tibetan cultural context.

CONNOR, KERRY M., University of Nebraska-Lincoln, Involuntary Migrants: When and Why They Leave Urban Afghan Refugees in Peshawar, Pakistan (Panel: Afghan Refugees Inside & Outside Afghanistan).

Several researchers have observed associative behavior among groups of involuntary migrants based on time of departure from the homeland, time of arrival in the country of asylum, and the specific reason for leaving the homeland. Research based on interviews with 976 heads of Afghan refugee families in Peshawar, Pakistan, indicates only a slight trend toward associative spatial behavior based on these factors. The data, however, do suggest the strong impact of other attributes such as geographical origin inside Afghanistan, ethnicity, educational levels, employment in Afghanistan, and membership in a particular Resistance party. Time of departure, arrival, and reasons for leaving, however, often correlate with these other attributes. It is suggested that a better understanding of the "push" factors involved in involuntary migration will aid in the understanding of refugee movements.

DIXIT, MILAN; DIXIT, SHANTA; and DURKIN-LONGLY, MAUREEN, Teachers College, Columbia University, Educational Needs and Resources for Disabled Children in Nepal: Implications from an Epidemiologic Perspective (Panel: Himalayan Research in Psychology: Implications for Educational Development).

House-to-house interviews were conducted to identify all 3 to 9 year old children with several mental and physical disabilities in one rural and one urban community in Nepal. Approximately one third of the over 300 children surveyed were found to have potential disabilities. Most of the children were evaluated by a psychiatrist and/or pediatrician to verify the presence of disability and suggest rehabilitation plans. The data show that planning for special education and rehabilitation should clearly be a national priority. The paper summarizes the clinical findings and discusses rehabilitation planning in light of the actual availability of resources for children with special needs in Nepal. The

paper also describes potential family and community resources that should be fostered and utilized so as to insure the feasibility and implementation of rehabilitation planning.

EMADI, HAFIZULLAH, University of Hawaii, Dept. of Political Science, Afghanistan from Queen Victoria to Mikhail Gorbachev: A Struggle for National Liberation (Panel: The South Asian Landscape).

The paper analyzes external interferences in Afghanistan's internal affairs since the last British attempt to subjugate the Afghan people in 1919 to the Soviet invasion in December 1979 and its aftermath. The central theme of the paper is to study Soviet foreign policy of the pre-occupation and post-occupation period in Afghanistan and the process of the development of armed struggle of the Afghan people. The paper also examines the prospect of Western aid policies to the Afghan resistance organizations in the wake of Soviet invasion as well as the political scope of the Afghan national liberation war.

FARR, GRANT, Portland State University, The Afghan New Middle Class as Refugees and Mujahidin, (Panel: Afghan Refugees Inside and Outside Afghanistan).

Class analysis has generally been avoided by scholars of Muslim countries including Afghanistan, who see vertical social structure such as tribe, ethnic group, and religion as more important than horizontal class identification. Nonetheless the emergence of a new middle class in Afghanistan has had profound consequences on the country's development. This paper examines the development of the new Afghan middle class. It traces its role in the political struggles of the 70's and 80's. It discusses their condition as refugees, including why and how they leave, and what their condition is in exile. Finally the paper examines their position in the present fighting. It concludes that while the present position of the new middle class is somewhat marginal, they have the potential to be an important force in the struggle for the freedom of Afghanistan.

GLIDDEN, WAYNE and RAHMANZAI, MOOIM, Center for Afghanistan Study, University of Nebraska at Omaha, Sovietization of Afghan Schools (Panel: Education and the Afghanistan Resistance).

Since December 1979 when Soviet troops directly intervened in Afghanistan, Soviet officials, with the acquiescence of the Karmal government, have pursued the systematic and ever-expanding Sovietization of Afghan life and social institutions. The objective of this Sovietization is to change traditional Afghan social values, customs, and social institutions to the point that Afghans are amenable to and supportive of Soviet policy. A critical element in the Sovietization of Afghan life and society are the schools. This policy has manifested itself in creating Afghan schools on the Soviet model and an educational system completely dominated by Soviet educators or their Afghan communist followers. Sovietization of Afghan schools has been pursued vigorously to the point that a new system of schools now exists in Afghanistan. While this new system of schools is confined to those areas controlled by the Soviets, they provide a nucleus for later imposition.

GULZAD, SULTAN A., University of Wisconsin-Madison, The Implication of the Durand Line on Afghan-Pakistan Foreign Policy Relations (Panel: Social Dynamics of Conflicts on Both Sides of the Khyber Pass).

The aim of this paper is to analyze the foreign policy relations between Afghanistan and Pakistan from the turn of the century until 1979. One tends to categorize inter-state relations in conflictual, cooperative, or competitive terms, yet usually relationships between nation-states vary from time to time as a result of particular conditions. Afghanistan's and Pakistan's case is quite different; one could generally describe their relations as one of constant cold war. The reason for this continuity can be traced back to the drawing of the Durand Line in 1893 by the British and the reigning King of Afghanistan, who drew the boundary between British India and Afghanistan. This boundary cut through the center of major Pushtun tribal areas, dividing the peoples of the area. This issue continued as a long-standing dispute, which was inherited by the Pakistani government in 1947. In order to understand the precise nature of Afghanistan-Pakistan relations, a basic understanding is needed of: their historical relationships; their foreign policy objectives and perspectives; their perceptions of each other; and also their ideologies. This paper analyzes the phases of interactions between the two

countries from 1947 to 1979 underscoring the observation that their relationships have been ones of constant strain.

HANIFI, SHAH MAHMUD, University of Wisconsin-Madison, The Roles of Agnatic Rivalry and Islam in the Political Processes of Afghanistan, 1919-present (Panel: Social dynamics of Conflicts on Both Sides of the Khyber Pass).

This paper discusses the national state political processes of Afghanistan from 1919 to the present. The thesis of this paper is that agnatic rivalry has played a large part in the structure of the Afghan government since 1919. There has been constant brother-brother, cousin-cousin, nephew-uncle, Durrani-Ghilzal, and Pushtun-non-Pushtun competition for power. This paper provides an understanding of the relationships which certain Afghan tribes and families have to one another, clarifying the dynamics of attempted power usurptions and the more pronounced structural changes that have occurred in the Afghan government. There has been constant jockeying for power between agnatic rivals, which, in combination with the influence of theological Islam, has had a retarding role in the consolidation and development of the governmental processes of Afghanistan. Having identified the above characteristics of the Afghan national political process, this paper will propose a model for more efficient opposition to today's Barbrak Karmal regime. An ideology emphasizing folk Islam in combination with regional autonomy under the "blanket" of Afghan nationality is suggested as an alternative to the numerous, competitive resistance groups of which the Mojadidi family is part.

HANSON-BARBER, A. W., The Mandala of Jnana Dakini (Panel: The Art of Tantra)

In a paper entitled: "The Nine Orifices of the Body," Dr. Alex. Wayman presents members of the Jnana Dakini mandala as being the guardians of the orifices. His scholarly study, however, disregards the major trend in the interpretation of this mandala. Employing seldom used Newar Sanskrit and Tibetan sources, one can document the development of the Jnana Dakini mandala. The first association the Jnana Dakini has is as the consort to Yogambara, the deity of the cremation ground. In this role, she represents yet another form of Prajnana Paramita. The next phase is where she is treated as an independent deity in the Jnana Dakini Mandala. Both of these sightings are found in the Sanskrit sources. In the Jnana Dakini Sadhana, Jnana Dakini herself is associated with the Avadhuti or central psychic vein. Her mandala is associated with different mental constituents of the Yogacara type. Finally, in more recent Nyingma literature, while retaining the association with the Avadhuti, she is associated with Yeshe Tsogyal, the Tibetan consort of Padmasambhava who has become deified.

HIBBARD, GEORGE E., Asian Art Society, Washington University, Lineage Paintings of the Tibetan Sakyapa Sect (Illustrated) (Panel: Studies in the Art of Tantra).

This paper is one of a series of papers written by the author covering the Lineage, or Assembly of Teachers and Gods (Tshog-Zhing) paintings of Tibet. Prior papers presented in various venues have covered the Gelugpa, Nyingmapa, Zhi-byed-pa and Kargyupa Sects. Several examples of Tibetan Buddhist Sakyapa Sect paintings, some from the famous Ngor E-wam Chos-I dan Monastery, one of the greatest scholastic centers of the Sakyapa School, will be analyzed with attention being given to their iconographic, historic and compositional aspects. A comparison will be made of the Sakyapa Lineage paintings with those of the other schools to illustrate their differences and similarities. Lineage paintings of the Sakyapa School are quite unique. They seem to follow an older tradition of Tibetan painting in style and composition than do the Lineage paintings of the other schools. Several conclusions will be developed regarding the importance of these paintings within the context of Tibetan paintings in general.

HOLMBERG, DAVID, Cornell University, Tamang in (Re)Construction (Panel: Cultural Multiplicity and Group Differentiation in Nepal: Part II).

The tendency among ethnographers of Nepal has been to view named groups (whether "caste" or "ethnic" in anthropological parlance) as transparent bounded entities with great historical depth. This essay looks at the emergence of "Tamang" as a named ethnic group. In particular, it examines complementary reconstructions of Tamang: Indo-Nepalese (including legal), Tamang, and anthropological. The paper suggests that "Tamang" used by anthropologists and by Indo-Nepalese is a direct function of the genesis of the state of Nepal. In conclusion, the essay interprets a Tamang myth

about origins of caste distinctions and points to a reconsideration of the use and meaning of ethnic categories in Nepal.

ILTIS, LINDA L., University of Wisconsin, An Evolutionary Model of Newari Ritual Traditions (Panel: Aspects of the Kathmandu Valley Civilization: History, Tibetan Contacts, Language and Ritual).

The religious practices of the Newars of Nepal are often viewed as corruptions of the merged great traditions of Hinduism and Buddhism. But perhaps the phenomenon of merged identities is only one aspect of a process of convergent evolution, there is also a process which results in divergent evolution. Examination of smaller units of ritual performance shows conventionalized patterned relationships between ritual symbols and actions, and variant structures of ritual traditions as a process in which complementarity of symbolic structures determines the synthesis of cultural information and behavior into meaningful acceptable patterns. In Newari rituals, not all performances or "recombinations" of smaller ritual units into larger structures are acceptable or viable. Cultural boundaries set the limits for what is acceptable ritual interpretation. The recombination of small ritual units is widespread in South Asian religious traditions; thus, ritual forms are in a constant state of evolution. Because of their extensive and longstanding trade relationships with other areas, the Newars have had a vast wealth of cultural and religious information and symbolic forms at their disposal. This has resulted in the development of an extremely rich variety of ritual forms.

KALAYIL, ANN P., University of Wisconsin-Madison, An Analysis of Babrak Karmal's Policies Towards the Minorities in Afghanistan (Panel: Social Dynamics of Conflicts on Both Sides of the Khyber Pass).

Afghanistan, like many of the other countries in the region, is comprised of a mosaic of different ethnic people. The Karmal government has embarked on a programme to develop the languages and literatures of the various ethnic groups, with the advice of the Soviets. Uzbek, Tadzhik, and Turkman have been brought into Afghanistan from the Soviet Union to teach the respected group's literature and language. The different ethnic groups in Afghanistan are dispersed in pockets throughout the country. The consolidation of ethnic groups is a puzzling task that lies ahead for the Karmal government. How this is being planned, and to what extent the Soviet model will be utilised will be discussed in this paper. The question of whether or not the Soviet model is applicable to Afghanistan will also be raised. The paper will conclude with a discussion on the ideological implications of the Kamal government's minorities policy.

KONDOS, VIVIENNE, Dept. of Anthropology, University of Sydney, Some Constructions about Women and the Nepalese Twice-Born Domicile (Panel: The South Asian Landscape: A Series of Selected Recent Research Topics).

This paper argues against two current anthropological approaches to Hindu male/female relations: the "complimentarity thesis" (Fruzzetti 1980) and the "prestige theory" (Ortner and Whitehead 1984). The discussion focuses on the Hindu construction of the material and the household arrangements of the Nepalese twice-born.

LEVINE, NANCY, University of California at Los Angeles, Diminished Ethnicity: The Karnali Zone (Panel: Cultural Multiplicity and Group Differentiation in Nepal: Part II).

The Karnali Zone differs from Eastern Nepal in that ethnic identity is muted. Styles of dress, housing, items of everyday life vary with altitude more than any ethnic factor. In dealings with outsiders, all try to portray themselves as high caste Hindus, a fact which puzzled early visitors to the area. This diminished ethnicity can be attributed to two sorts of factors. First, the residents of the Karnali Zone have a long history of assimilation and intermarriage--this is a very long occupied region. Second, the region has been ruled by high caste Hindus since before the fifteenth century. This has produced a situation in which vertical ties between ruler and subject, later patron and client, substituted for horizontal ties between members of the same ethnic group.

LEWIS, TODD T., Columbia University, Newars and Tibetans in the Kathmandu Valley (Panel: Aspects of the Kathmandu Valley Civilization).

Although continually Indianized since Licchave times, Kathmandu Valley culture also reflects its position as a satellite on the periphery of Tibetan civilization. After reviewing the history of Tibetan presence in the Valley up to the present, the paper explores the implications of this influence for Nepalese historiography and the anthropological analysis of Newar Buddhist tradition.

MCHUGH, ERNESTINE, University of California-San Diego, Social Interaction and Ethnicity among the Gurungs of Nepal (Panel: Cultural Multiplicity and Group Differentiation in Nepal).

The Gurungs of Nepal consider a group's characteristic style of social interaction to be a central feature of ethnic identity. Thus in describing themselves as distinct from neighboring groups they define themselves as 1) generous rather than selfish, 2) friendly rather than reserved, and 3) self-effacing rather than self-important. These qualities reflect principles of 1) reciprocity, 2) inclusiveness, 3) egalitarianism. These principles are embodied in Gurung kinship terminology, and reflected in its use. Gurungs use the idiom of kinship to organize relationships with non-kin as well as kin, non-Gurungs as well as Gurungs. The ways in which this idiom is used to classify unrelated Gurungs, fictive kin of other castes, and other non-Gurungs reveals the extent to which the principles of reciprocity, inclusiveness, and egalitarianism are applied to unfamiliar Gurungs and to members of other ethnic groups. Examination of this issue sheds light on the degree to which boundaries of ethnicity and community coincide for Gurungs.

MILLER, BEATRICE D., Madison, Wisconsin, Tibet as a Focus for International Interests (Panel: Traditional Tibetan Polity, 7: Traditional Tibet and The International Setting).

From the latter half of the 19th Century events far afield -- from Africa and Southern and Eastern Asia -- as well as in the geopolitical "heartland" of Central Asia poised the British, Russian, French and Japanese empires in direct and indirect conflict. Their struggle for control profoundly influenced the world's perspectives on Tibet and set the scene for Tibet's present day conditions.

NAFZIGER, DALE L., Cornell University, Water Usage for Irrigation and Micro-Hydro Power Generation in Rural Nepal: An Investigation of System Management Alternatives in Nepal (Panel: Water Resource Development Alternatives in Nepal).

Although Nepal is very poor economically, she is blessed with an abundance of hydropower wealth. Little of this potential has been developed to the present time. One form of development which is taking place, however, is the installation of micro-hydro turbines in rural areas. When these installations were initially implemented in the 1960s, their primary task was and continues to be that of alleviating the arduous task of pressing oil, grinding flour, and hulling rice by traditional methods. Because the power derived from these turbines is utilized locally, there are times when it is important for the local people to assess which is more advantageous: using the available water for milling versus using it for irrigation. The decision becomes more complex when it is noted that irrigation has traditionally been a communal activity whereas many of the micro-hydro schemes are under private ownership. In making decisions where two highly vested but diametrically opposed interests are represented, conflict has often been the result. The gravity of the situation is resounded in an observation made by one recent survey stating that, "there is a great danger of turbine schemes coming to a halt on account of water use conflicts." Based upon the author's field experience, this paper examines some of the criteria used by rural Nepalese in making the decision as to whether the available water ultimately goes to the crops or to the turbine. Also considered are water management decisions in the case of the ghatta -- the traditional flour mill which has existed for centuries. By examining the ghatta and considering other alternative forms of water system management, strategies for conflict management within the microturbine/irrigation system are explored.

NOBLE, WILLIAM ALLISTER and SANKHYAN, AD RAM, University of Missouri-Columbia and Town Planning Department, H.P., at Simla, Sati Memorization and Worship: Himalayas Versus the Punjab (Panel: Environment, Culture, & South Asian Urban Experience).

In the Himalayan kingdoms, the rulers and their sati wives were usually commemorated through the sculpting of stone pillars. The most impressive pillars are at Mandi, but at Naggarr the highest number of satis (over 70) are honored on one stone. In the Triloknath Temple at Mandi, women became satis by jumping down a narrow well shaft. After they had thrown the first stones, commoner satis in the Himalayas were most often commemorated by the later accumulations of stones cast by passers-by. The white Rani Kulavi Temple with sikhara at Bilaspur honors a rani and daughter who became protest satis. Shrines commemorating satis from different castes are near many Punjab villages. These vary from small solid structures to others which are open within and holding sculpted stones. The shrines are usually squared and with an arched pyramidal roof, but Islamic influence reveals itself in the domes surmounting some. From the alluvial Punjab and on down the Gangetic Plain, paired linga-like stones were also used to commemorate males and their sati wives. While there are several shrines near Beerpur, close to Jammu, the sati temple there is related to a lively folk tale. The paintings within depict a victimized male who continued to ride headless on a horse, and his mother, wife, horse, and dog who immolated themselves on the funeral pyre.

PACH III, ALFRED, University of Wisconsin-Madison, Perspectives on Jaisi Brahman Society in the Kathmandu Valley (Panel: Cultural Multiplicity & Group Differentiation in Nepal).

This paper discusses Jaisi Brahmins from the viewpoint of those both within and outside of their society. This group is an example of the generation of a caste from improper marriages. Although classically considered the offspring of widow marriages, they now comprise a distinct, if at times ambiguous, "jat" and adhere to the rules of endogamy. Within the larger Nepalese society, Jaisi Brahmin individuals often pass as full Brahmins. In the Kathmandu Valley, Jaisi Brahmins from particular villages are further distinguished from full Brahmins by their secondary occupation of keeping buffalo and selling milk. This paper examines some of the aspects that distinguish this group from other groups in the Kathmandu Valley, and considers certain dynamic features which emanate from within and elaborate the society. Particularly ancestor and clan deity cults provide important social and symbolic vehicles that make one's participation in local descent groups, and Jaisi Brahmin society, in general.

PARKER, BARBARA, University of Michigan, Wealth, Caste and Ethnic Boundaries: Who Is the Real Thakali? (Panel: Cultural Multiplicity and Group Differentiation in Nepal: Part II).

The Thakali-speakers of the upper Kali Gandaki gorge are divided into three endogamous clan systems. During the late nineteenth century, the southernmost of these groups, the Thaksatsae Thakalis, secured from the Rana government lucrative duty collection and trade monopolies which allowed them to dominate the other two groups economically. Utilizing the introduced idiom of caste hierarchy, combined with the superior public relations access that accrues to wealth and education, the Thaksatsae group subsequently claimed exclusive rights to Thakali identity, asserting that the other two groups were a separate and inferior jat. Three independent endogamous groups were thus redefined as two hierarchically ranked castes. This definition was generally accepted and publicized by scholars of the area, both Nepali and foreign, until recently. In the last two decades, however, Thaksatsae's economic hegemony has been broken, and the Thakali-speakers of Marpha have begun to amass significant capital of their own. This may initiate a redefinition of local ethnicity, as competing claims are pressed by Marpha from a position of growing economic power and political influence. The use of ethnographers by various Thakali groups to promote their respective claims spotlights the problem of ambiguities in anthropological definitions of ethnicity and ethnic boundaries.

POKHAREL, JAGADISH, M.I.T., Large Scale Water Resource Development Projects and the Problem of Population Displacement (Panel: Water Resource Development Alternatives in Nepal).

Growth alone has been the single major concern of development planners in developing countries. Various models and experiments have been tried out for the purpose. Many countries are hurriedly exploiting the resources at their disposal. The side effects of such ventures however, have not received adequate attention. This paper presents the findings of a study on the displaced people from the reservoir area of the Kulekhani Hydroelectric Project in central Nepal. It discusses the compensation issues and examines (critically) the appropriateness of cash compensation policy as a mitigation strategy in the rural subsistence economy and outlines some thoughts for mitigation strategy. The study was carried out during a three month period, from January to April of 1985, in Nepal. Water resources in Nepal have received great attention in the last two decades. Numerous

dams and structures have been built in the country either for cheaper electricity, irrigation of land, flood control or some combination of benefits. These ventures appear to have generated some real income in the country. However, the displaced people, a section of the population which has paid a high cost, have not been subject of serious debate. They are exposed to unjustified hardships. The mitigation strategies under common practice in the country are simplistic in nature and do not account for all the losses the people are exposed to.

PRADHAN, UJJWAL, Cornell University, Property Factor in Irrigation: Lessons for Rehabilitation (Panel: Water Resource Development Alternatives in Nepal).

In Nepal, the State is increasingly getting involved in irrigation development for a variety of reasons. Likewise, the voluntary organizations have also contributed to this growth. However, a large part of irrigation in Nepal is served by traditional or local sector. Much work undertaken in irrigation improvement is through rehabilitation of existing irrigation systems. It is essential to note the types and levels of property rights existing within a system of irrigated agriculture. It is very likely that rehabilitation brings about a change in these property relations, and that at times if due care is not taken before hand, it may have a detrimental or negative impact. This paper analyzes one such case study of conflict in a hill irrigation system in Nepal. It focuses primarily on the issue of water allocation, a problem that resulted after the government's assistance in extending an existing irrigation system. The case study highlights the dynamics of property factor in the particular irrigation system, and shows the necessity for understanding such relations before undertaking any irrigation activity.

REGMI, M. P., Dept of Psychology, Tribhuvan University, Projective Profiles of the Personality of Gurung Children From Western Nepal: Some Educational Implications (Panel: Himalayan Research in Psychology: Implications for Educational Development).

It has been claimed that certain modal personality traits in the West may facilitate children's induction into and learning in formal education situations. This paper examines the nature of Gurung children's modal personality with respect to the Western model of education presently in force in Nepal. A Rorshach projective test was administered to 30 Gurung students ranging from 9 to 16 years of age from the middle hills of West Nepal. General findings indicated that the Gurung children tested possessed low ego integration, were highly attuned to practical and concrete aspects of everyday functioning, and exhibited intellectual rigidity. The 16 to 18 year old age group demonstrated average handling of emotional stimuli in the environment. The findings are discussed in relation to Gurung students' induction into and learning in formal pedagogical situations in Nepal. Issues surrounding appropriate and inappropriate uses of projective measures in Nepal will also be discussed.

SHRESTHA, G. M., Research Centre for Educational Innovation and Development, Tribhuvan University, Cognitive Development of Primary School Age Children in Nepal: Study on Reasoning (Panel: Himalayan Research in Psychology: Implications for Educational Development).

The study was carried out by the Research Centre for Educational Innovation and Development of Tribhuvan University. Two hundred school-going and non-school-going children of both sexes ranging from 6 to 10 years of age from the Southern Plain and Middle Hill regions of Nepal participated in the study. A series of Piagetian tasks designed to examine children's development of the concepts of time, length, weight, area, and volume were administered to each child. Tasks designed to display their estimation and calculation abilities in each conceptual area were also administered. The findings indicated that there was an overall increase in conceptual reasoning with increasing age. Non-school-going children performed at a more advanced level on most concept of length tasks whereas school-going children performed at an equivalent or more advanced level on most of the other tasks. The effects of sex and location varied with the age and the task. The findings of the study will be discussed with respect to what they may suggest for the content and sequencing of primary curriculum materials in Nepal.

SHRESTHA, MOHAN N., Bowling Green State University, Bowling Green, Ohio, Employment Structure in Urban Centers of Nepal (Panel: Environment, Culture, and South Asian Urban Experience).

Although the number of urban centers and urban populations have grown rapidly in Nepal during the last thirty years, the employment structure of the urban population has basically remained rural in character. Almost 64 percent of the economically active population in these urban centers are still engaged in agriculture and related activities. The second largest sector is commerce (16 percent). Some of the urban centers, such as Mahendra Nagar and Tribhuvan Nagar have almost 90 percent of economically active population in agriculture. Thus, the high growth rate of urban population cannot be taken as an indication of urbanization, nor should it be taken as an indication of the shift in the economic base. The urban centers in Nepal have not yet played any significant role in bringing about changes in the economy of the country.

TETHONG, TENZIN, Office of Tibet, Tibet: Seeds of Change (Panel: Traditional Tibetan Polity, 7: Traditional Tibet and the International Setting).

Before the Chinese takeover of Tibet in 1950, there were numerous Tibetans who explored the world's range of ideas of change. This paper examines some of these individuals and ideas.

THAPA, GANESH, Cornell University, Policy Issues in Irrigation Development in Nepal (Panel: Water Resource Development Alternatives in Nepal).

Past government efforts in developing irrigation have yielded limited success. The dismal performance of the government has drawn the attention of development planners and specialists to the need of taking a closer look at some emergent policy issues relating to irrigation development in Nepal. This paper will discuss some of the important policy issues. One such issue is the desirability of added emphasis on farmer managed small-scale irrigation schemes. Another controversial issue is the efficiency and cost effectiveness of big surface diversion schemes versus groundwater development. A widely differing view is emerging between the government and international donors on the order of priorities of various modes of irrigation development. Of late, there has also been a realization on the part of the government as well as donors about the importance of on-farm development and water utilization aspects of irrigation in order to realize optimum benefits from already created irrigation infrastructure. Government policies will continue to influence the pace of future irrigation development. This paper will attempt to discuss the appropriateness of alternative policy measures for irrigation development in Nepal.

THIESSEN, ERNEST M., Cornell University, Complementarities Between Irrigation Development Objectives in Nepal (Panel: Water Resource Development Alternatives in Nepal).

Irrigation development is recognized as an important component in the strategy for growth in Nepal. An equally important, but often more elusive objective is equity, i.e. that the poorest of the population have opportunity to achieve a significant share of the benefits from development. Whether there are conflicts or complementarities between these objectives depends on whether or not they can both be achieved without trade-offs. Important factors determining the degree of achievement and possible trade-offs between objectives are the policies relating to land and water allocation. This paper discusses how the local Water Users' Association at the Andhi Khola project is using "redistribution when growth" and "market share allocation" in the implementation of their irrigation scheme to achieve both growth and equity without compromise.

TIKKU, GIRDHARI L., University of Illinois at Urbana-Champaign, Indian Mysticism: The Kashmiri Experience (Panel: The South Asian Landscape).

Hindu and Muslim mystics in Kashmir observe some common ritualistic practices and techniques for attaining self realization. This paper proposes to examine one of these, the repetition of 'one' or 'one hundred' or 'one thousand' names of god, as a device for liberation from their bondage. On the one hand it will be shown that these practices and devices already exist in both the Hindu and Muslim mystical traditions and on the other hand that the Kashmiri mystics accepted the underlying unity of a purpose in these two separate religious paths. In conclusion, it will be argued that while 'one name of god' helps concentration on one aspect of god to the exclusion of the rest, repetition of many and

sometimes opposing names (aspects or characteristics) helps the attainment of concentration on the universal. Examples will be drawn from the Hindu and Muslim practices in and outside of Kashmir.

VAIDYA, RAMESH, University of Minnesota, Financial Policy, Historic Preservation, and the Tourist Industry: The Case of Nepal (Panel: The South Asian Landscape).

The basic premise of this paper is that historic preservation can play an important role in the development of the tourist industry. Historic preservation projects can then be analyzed in terms of their economic potential to contribute indirectly toward the achievement of development goals. In the case of Nepal, the largest concentration of historic monuments is in the Kathmandu Valley where approximately 900 monuments were built between the tenth and the eighteenth century, more than ten percent of which have been rated exceptionally important from the architectural perspective by UNESCO experts. In this paper, the scope of the preservation problem in the Valley is discussed for three major aspects of concern: the size of capital finance required, the rediscovery of materials production technology and the availability of highly skilled artisans. A number of alternatives are analyzed for solving these problems, and the implications for future preservation projects are discussed.

VAJRACHARYA, GAUTAM, University of Wisconsin-Madison, The Origin of Kartikeya Kumara (Panel: Aspects of the Kathmandu Valley Civilization).

The cult of the child-god Kartikeya Kumara was once prevalent all over India; these days however, it is practically extinct. Only in Nepal today the child-god is still worshipped, and a festival related to the god has been held annually. In this connection even more remarkable is the fact that the Newars of the Kathmandu Valley celebrate the birthday of the child god every year as the official beginning of the rainy season. It is this tradition that helps us to find out the origin of Kartikeya Kumara. In ancient India, as recorded in various Vedic texts, it was believed that during autumn mother goddess who represent rainclouds conceive a baby in their atmospheric womb. After a ten months pregnancy in the beginning of the rainy season the mother clouds give birth to a child or kumara who represents the shower of rain and lightening. Thus it is not surprising that the names of seven Kritikas, the mothers of Kumara are derived from various Sanskrit synonyms for rain cloud. According to the Taittiriya Samhita some of the Kritikas are individually known as Maghayanti Barsayanti, Stanayanti which literally mean cloud, rain cloud, thundering cloud, etc. With this textual evidence one can safely conclude that Kumara the son of clouds originally represented the shower of rain and lightning, a fascinating conception which has been partially preserved in Nepalese tradition by celebrating his birthday as the official beginning of the rainy season. In India the original significance of Kumara seems to have been interrupted after the child god became associated with the Puranic legend of Siva and Parvati as a son of that divine couple.

VARMA, DR. RAVINDRA, University of Udaipur, (Sakhadia University), The Emerging Regional Co-operation and Organisation in South Asia (Panel: The South Asian Landscape: A Series of Selected Recent Research Topics).

Regional organizations have proliferated throughout the world since the Second World War. But this upsurge of regionalism drew a blank in South Asia for a long time. This was tied to intra-regional disputes (some of them leading to shooting wars), the predominant position of India which kept her neighbors at bay and India's fears lest her smaller neighbors gang up against her in a regional conclave. The ice was somewhat broken when, in 1980, Bangladesh floated the idea of a regional summit. The "Big Two" of the region -- India and Pakistan -- were lukewarm at first but fell in line on the condition that officials should meet first, foreign ministers twice. They have identified 9 areas of co-operation. Stage is now set for a summit of the heads of government. The seven countries of South Asia are thus inching towards a framework of regional co-operation. If political will is there, this regional organization (SARC) will be able to work for the welfare of 900 million people of South Asia who are almost 1/5 of the human race.

***OUTLINES OF PAPERS READ IN THE ART HISTORY PANEL AT THE WESTERN CONFERENCE FOR THE ASSOCIATION OF ASIAN STUDIES AT CALIFORNIA STATE UNIVERSITY, LONG BEACH**

BERNIER, RONALD M., University of Colorado, Boulder, CO, Interaction Between Non-secular and Secular Architecture in the Himalaya

Trabeated construction that is supported by its own weight and stabilized by its own mass is the rule in sacred and secular architecture from Bhutan to Sikkim to Nepal to Himachal Pradesh to Kashmir. Solid buildings having substantial roof overhangs are made of piled materials, most often wood frame combined with fill of brick or stone in absolute combination. Foundations are never deep, although buildings may rest on raised platforms, and structures in the Himalayan earthquake zones may be said to ride the ground rather than nest in it. Furthermore, the absence of mortar between dressed stones can help walls to be flexible under stress.

Himalayan buildings are picturesque and Penelope Chetwode's use of the term "chalet style" for many of Northwest India's timber-bonded monuments is appropriate, even though the geometric and modular systems of this regional architecture are much more exacting and more tied to classical literature than any that might be found in the Alps. The perfectly balanced buildings are vulnerable only to natural disaster, especially the effects of climate. Preservation techniques have been much approved (witness the reconstruction of the Durbar Palace in Kathmandu) but the task of saving over 2000 temples in Kathmandu Valley alone is impossibly large.

Non-secular buildings that rise to heights of several storeys with diminishing roof sizes are generally called "pagodas" in the Himalaya and their floor plans are usually square. Before the construction of a temple begins the earth is carefully measured in alignment with the square of the four cardinal directions and this pattern serves as a yantra or meditative diagram. The earth is tamped, honored with offerings, blessed and finally cut. The focus of the ground plan is upon the intersection of diagonal lines (kongsutra) that are drawn (or demarcated with string) from the four corners of the perfectly square mandala. The intersection will be the center of the garbha grha (womb house) as sanctum sanctorum. Invisible borders outside of the square itself, believed to be circular, are believed to stand for the boundaries of the universe.

Geometric "centering" is less important when a house is planned rather than a temple, but careful evaluation of auspicious and inauspicious elements of a site's geography remains crucial. Direction of prevailing winds, topography, vegetation, and location of underground nāga spirits including the great serpent Ananta who carries the earth on his head and encircles a temple with his body must all be taken into account. Construction begins with prayer and sacrifice. And when a house is completed a religious and family celebration is held, marked by crowning the roof with a temporary stupi as a pinnacle or axis that corresponds with the peak atop any sacred structure and has the same religious and auspicious connotations.

A house is different from a temple in nearly all parts of the Himalaya because it is not centered on a single inner space, it does not have a circumambulatory passage within its walls, its upper floors are functional and not symbolic, and it is not intended to be dark or secretive (the windowed spaces of Tibet-oriented monuments and the balconied second floors of some Nepalese temples are exceptional). Yet any Himalayan temple is essentially the "house" of the deity that it enshrines. This is as true of the forbidding and semi-subterranean temple of the goddess Kankesvari in Kathmandu Valley as the lofty pagoda that belongs to the goddess Hidimba Devi in her pine forest above Manali in Kulu Valley. In both of these spirit dwellings the goddess is symbolized by a stone, while in the temple of Laksana Devi in remote Brahmor, Himachal Pradesh, a fully anthropomorphic image of the goddess is bathed, dressed, adorned, and fed in the privacy of her lantern-roof abode. The bronze sculpture and the small wooden building both date from the 7th century. Except for elaborate woodcarving on its facade and in the four-column interior that recalls Parthian temple plans, the temple follows domestic design traditions. It is, again, the house of the goddess.

A type of Himalayan structure that bridges any gap between secular and non-secular patterns is the bhandar of Himachal Pradesh. It combines the functions of storehouse and shrine, usually being attendant to a temple proper as in the towns of Manan and Sarahan. It is not elaborately carved or painted, except for borders of free-hanging wooden pendants that may be found along roof or balcony edges. It is essentially a defensive tower and it is much like a palace building except that it has few windows. Unvarying in the width of its storeys, the bhandar is one of the most dramatically vertical of Himalayan structures. Its counterpart in Nepal may be found in the palaces of Gorkha, Kathmandu, and Nuwatkot, each of which is associated with major shrine rooms.

Closest relationships between temple and house are present in the art of Kathmandu Valley. This is true in spite of important structural differences, for the house is supported by a central bearing wall while the temple follows a wall-within-wall plan to surround its central space. The living goddess Kumari, who has many incarnations in various towns around the valley, always occupies a house that becomes a temple simply because she lives there. Shrine rooms on the upper levels of dwellings may become so elaborate that they are like temples placed on top of houses. Monasteries have courtyard plans like compound houses, with their origin in India's ancient caturstala. And the oldest surviving temple in Kathmandu, Kasthamandap, built in the early 12th century, is actually a Hindu pilgrimage house or math that is meant primarily for the use of priests. It is an unusual structure, however, in it may be more useful to compare a typical temple to a typical house.

The temple of Indrēsvara Mahādeva in Panauti is a very early building (1294 A.D.) but it presents structural and iconographical elements that are continuous with domestic art even today. It rests on a raised platform of brick and stone, it is built of brick with a wooden frame, its roof is covered with tiles over layers of wood and earth, the frames of its doors and windows extend like wings (paksha) into the brick matrix of its walls, its cornice is a continuous beam that is embedded all around the exterior, struts brace and support the overhanging roofs with their metal bells, lattice shutters can be closed over the windows, doorways are covered by sculpted torana tympanum, and the doors are double.

A house has most of the above components even though it is less perfect and less complete than a temple. It is not the three-dimensional projection of a mandala diagram into full supernatural expression as is a temple, but it can have its own blessed signs. These will not include precious ornaments like garlands of pearls (hararddahara), metal bells, or prayer banners by which gods are said to descend towards the earth, but other elements are shared. A house may stand on a slightly elevated base, it is made of bricks with a wooden frame and its roof is covered with tiles atop layers of wood and earth, its door frames and window frames have simple paksha extensions into surrounding walls (though lacking the river goddesses and makara water monsters that are common to temples), and it has continuous cornice beams as well as latticed windows and double doors. It is not perfectly square in plan, like a temple; and it does not have four doors opening to the cardinal. No metal repousse will be found on its surfaces. Its roof-supporting struts will be plain or, at most, be given a curvilinear silhouette that derives from 19th century Europe, especially Italy. Temple struts are carved to represent the Hindu-Buddhist pantheon. Clearly, there are marked differences in both kind and degree of applied arts that are added to temples and houses so that the dwelling calls down heaven and the temple stands as "super-house." Himalayan temples may be blanketed in meaningful ornament while Himalayan houses are merely wrapped with a ribbon.

REEVES, MURIEL E., A Comparison of the Relationship of Sculpture and Architecture in Nepal and India

The relationship of sculpture and architecture in Nepal evidences a rather interesting perception not only of architecture and sculpture but of man's relation to the divine and of the cosmos itself. The intention herein is to examine this relationship and its accompanying perceptions. For purposes of this examination, consideration of Nepalese architecture and sculpture will be confined to those monuments within the Kathmandu Valley and will be concerned with religious architecture (or at least architecture which was originally religious in its intent).

Since India has, from very early times, been a significant influence on Nepalese culture, it will be most productive to begin with a brief glimpse at the relationship of Indian architecture and sculpture. This will be of help in establishing the differences between these two cultural perceptions and will also provide an indication of the degree to which India has influenced Nepal in this regard.

The Indian temple, as exemplified by those at Ajanta, Khajuraho, Mahabalipuram, etc., was not conceived at all in terms of an architectural structure to which was added decoration. Instead, the concept was essentially sculptural. Sculptured embellishment, including dynamic representations of both heavenly and earthly realms, was perceived as a living, organic microcosm of the universe and therefore was created in terms of sculpture with its dynamic presentation of living forms rather than in a more statically inclined architectural form. In India, sculpture and architecture were one, but that one was more sculptural than architectural.

That this Indian ideal of the temple as a sculptural monument was certainly known in Nepal is evident in the creation of Sikhara style temples such as the Mahabuddha temple in Patan. Many of the Sikhara style temples in Nepal, however, show a distinct change in the basic concept of the building. No

longer is the embellishment structural. Some of the decorative elements serve to emphasize and enhance the architectural forms thus heightening the viewer's awareness of them. Other ornamental elements appear to have been added to the building almost as a kind of afterthought.

Stupas, also, provide an interesting comparison with Indian forms. Although primarily architectural in nature, Indian stupas, such as the Great Stupa at Sanchi, may have gateways and railings in which sculpture predominates as the basic structural form. In Nepal there is no evidence that such elements were ever created in relation to stupas, so that it would appear that there are no elements in the stupa complex in which the structural form is essentially sculptural. Interestingly, however, there is a sense of the additive sculptural element mentioned above in regards to certain Sikhara style temples. This is found in the proliferation of shrines, caityas, and figures which have been added directly onto the sides of the stupas or in the immediate vicinity. Bodhnath and Swayambhunath Stupas, for example, have developments of this sort. These additive elements have been attached to the monuments at various times throughout the years. They do not seem to have been part of the original architectural plan but have been created since the completion of the stupas by later devotees as part of their religious practice.

In looking at the most characteristic Nepalese forms of religious architecture, the vihara and the multi-stage temples including the so-called "pagoda" style temple, it is apparent that the view of sculpture as an additive feature of architecture is the prevailing concept. Such buildings as the Siva Temple at Jaisidawal and the Tateju Temple in Patan show that these Nepalese forms of architecture make considerable use of sculpture. Doors, entries, windows, pillars, beams, etc., may be elaborately carved. There may be niches containing sculpture or sculptural embellishments may be added onto unbroken wall surfaces. Freestanding sculptures often frequent the vicinity, being placed along stepped entries, in adjoining court-yards, or in other nearby areas. They are sometimes placed close to the walls of buildings or in corners so that the structure forms a backdrop for the figures.

Despite all this ornamentation, the buildings still reflect the ideal of an architectural monument adorned with sculpture. One element only seems to suggest that the concept of the sculptural monument has not been forgotten. Supportive struts under the roofs are frequently carved and brightly painted. These lively sculptures seem thoroughly integrated into the basic structure of the building, and are the only sculptural elements which are structurally fundamental.

The additive nature of embellishment on these Nepalese buildings includes not only features designed in the original building plans, but also later additions which have been made randomly through the years. Devotees have seen fit to express their devotion by adding images to these temples, thus expanding the sculptural decoration which ornaments them. This practice of continuously adding to the buildings, as though making the creative building process go on throughout the life of the structure, seems quite fundamental to Nepalese religious practice, finding expression even in such unusual ways as the permanent addition of vessels and utensils to the upper parts of the temples.

Not only are sculptural elements additive, but they may, on occasion, be changed or moved. When temples are repaired, images may be removed and they do not always get returned to the place from which they were taken. They may even be placed in another temple. Later another sculpture may be installed in the vacated place. This practice dramatically illustrates the additive nature of sculpture in these buildings.

It is apparent that the Nepalese view of the relationship of architecture and sculpture is quite different from the Indian. Whereas the Indian temple is primarily a sculptural monument defining holy space, the Nepalese is more an architectural form intended to house the divine.

Once the construction is finished, the physical aspect of the Indian building is complete, so that the living continuity of the creative force is expressed wholly through the dynamic imagery of the monument and through the human activity of religious devotion. Physically the temple is a set environment into which man is invited but with which he must conform. It is not his prerogative to alter this environment for it is an environment controlled by the gods.

In contrast, the Nepalese temple is subject to an on-going construction process due to the additive nature of sculptural orientation. The continuing life-force of the building depends in great part on the perpetual addition and/or change of sculptural elements. Thus the environment that is the Nepalese temple is an evolving one aided by the sometimes capricious hand of man. Physically the Nepalese temple exists in a transient state dependent upon continual human intervention for its perpetuation.

Considered from a theatrical point of view, the Indian temple is not only the stage, but the entire theatrical production including the sets, the actors, and the drama itself. The Indian temple is a wholly active entity in which the dynamic images as well as the human devotees play out their roles in a pulsating, rhythmic accord, the pace of which is set by the temple itself.

The Nepalese temple seems to be more of a static backdrop against which the actors have been introduced as an outside element. Here the drama, while no less dynamic, is less cohesive since the images are often subject to random human manipulation. The dramatic factor is not found so much in the structure as in the sculptural additions and their continuous modification by men and women desiring to express their religious devotion. The rhythmic pulse of these monuments seems to be set by the whims of man rather than dictated to him by the temple structure.

To what can we attribute this difference in the Nepalese and Indian concepts of architecture and sculpture? This, of course, is a most difficult and challenging question. At this early stage of the investigation there does not seem to be any clear-cut answer. However, one important factor does suggest itself in this context, the climate. The Indian temple concept apparently developed in a warm climate which encouraged an outdoor lifestyle. Although buildings might provide relief from rain or sun, there was no need for architectural protection from the cold. The Indian temple is a portrayal of an outdoor setting within the natural environment and functions within an outdoor context.

The Kathmandu Valley is cooler, the winters often becoming rather chilly, so that protection is needed from the cold. Just as humans seek comfort and warmth, so do the gods. Thus the Nepalese have provided them with an architectural environment which supplies those amenities. Therefore, it seems that the architectural nature of the Nepalese temple, in contrast to the sculptural nature of the Indian temple, may be due in part to the demands of climate.

SHIMKHADA, DEEPAK, Interaction Between Painting and Architecture in Nepali Art

Architecture, both as decorative and functional elements, has come to play an important role in Nepali manuscript painting since the 11th century A.D. But scholars have overlooked this aspect. This paper will try to deal with that aspect from two primary standpoints: why and how architecture is represented in manuscript painting and how does it differ in structure and details from that in India.

The earliest Nepali manuscript to use architecture in many of its compositions is the 1015 A.D. Cambridge Prajnaparamita. Although one scholar has questioned the contemporaneity of its paintings with the actual date of the text, it is not of concern here. The primary concern of this paper is to examine the representation of architecture, its meaning and function as depicted in paintings. Fortunately, the Cambridge Prajnaparamita manuscript contains the highest number of illuminations showing architecture in one form or another.

In a composition from this manuscript the goddess Tara is seen seated in the graceful lalitasana posture. On either side of the goddess is a female attendant, also seated. Together they are enclosed within an architectural structure whose niche symbolizes the garbhagriha, the inner sanctum of a shrine. The shrine consists of a trefoil arch and a sikhara, a stepped superstructure. Supported by two pillars, the superstructure rises up in the form of a pyramid with diminishing horizontal courses, ending up abruptly with a flat roof surmounted by a finial called gajur. This superstructure, according to Kramrisch, is the means by which the purpose of the temple is shown to those who come to see it, darshana, and to attain release, moksha. Appropriately, the temple in the painting is depicted with its tall sikhara as if to lead the devotee to darshana. A Buddhist temple, like its Hindu counterpart, represents a house of divinity, the orientation and expansion of which parallel a Hindu temple. Again in the words of Kramrisch, "Their main direction, in the vertical, is towards god, the supreme principle." The towering superstructures seen in the Cambridge Prajnaparamita paintings are, in all probability, indicative of this principle.

On both sides of the gajur are two figures of seated animals facing outward. While the animal facing the left could be a bull, like the one seen in front of many Siva shrines of Kathmandu Valley, the other is unidentifiable. It is curious that a seated bull, encountered at many a Nepali Siva temple, should appear in a Buddhist painting. Could it be a manifestation of the Nepali penchant for religious tolerance? Whatever the reason, it must be considered a Nepali feature, since such a representation in Eastern Indian manuscript painting of the same subject is not known.

About 32 compositions in the Cambridge Prajnaparamita which show deities installed in shrines are identified by labels, giving the name of the deity enshrined and the name of the place where the shrine was supposed to have been located. Drawn in outlines and depicted in front view, these shrines are often called torana, or "gate of glory" by some. But for reasons given below I suggest it is a shrine rather than a gateway.

A torana generally refers to a doorway such as those seen in India at the four corners of the great stupa in Sanchi, and the one seen in front of the Bodhgaya temple, by Dharmasvamin in A.D. 1235. In each case, they serve as an entrance through which the devotee gains access to the inner ground of the holy structure. Toanaas of different types and sizes are found also in the Hindu complexes. In south India, they are called gopuram. But the function in each case remains the same, for it serves as an entrance to the main structure. In short, toranas and shrines, though they are related to each other, are two separate structures of the same stupa or temple precinct. Hence to assume that torana means "shrine" will be to confuse the issue, for each is a separate entity having a specific function. Because a divinity is seen enclosed underneath the arch and because the accompanying label refers to it by its place name, the structure in the Cambridge Prajnaparamita must be a shrine rather than just a gateway.

As mentioned earlier, the shrines in the Cambridge Prajnaparamita paintings are accompanied by labels, identifying them by their place-names. Since two-thirds of the names are associated with places in Eastern India, the late S.K. Sarasvati argued that these shrines had their origins in Bengal. But most of the shrines, though each one is identified by a different name, seem to have similar structure. For example, the basic structure of all the shrines, regardless of their different place-names, consists of an arch, two pillars and a receding superstructure, surmounted by a finial usually in the shape of an amalaka, or a stupa, or a sikhara. It is underneath the arch that a deity is enshrined in various asanas. According to Sarasvati, "It is only reasonable to assume that they were no imaginary representations, but were actual reproductions of the architectural types existing at the time." The place names appended at the bottom of each painting might lead one to assume, as Sarasvati did, that the structures depicted were replicas of the shrines which existed at the time the manuscript was copied. But on examination the majority of the shrines reveal, contrary to Sarasvati's belief, that it is not so. Except for a few minor details, all shrines seem similar, including those which are supposed to have been located in China, Java, Cambodia, Sri Lanka and South India.

As suggested by two examples, the basic structure of both the shrines is similar. One of the paintings is said to enshrine the Buddharupaka Lokesvara in China, while the other painting is said to enshrine the goddess Vasudhara in the city of Kanci in South India. Since each deity is represented in the context of a particular geographical location, one would expect to see a temple of a particular style indicative of that particular place. But all structures, regardless of their geographical location, show uniformity in type.

It becomes evident from the above examples that the artist used the same basic shrine type, except for a few minor details, also for shrines located outside of India. It is reasonable to believe that the model for all this came from India, North India in particular. However, this is not to say that the Nepali artist copied everything with his eyes closed. Even within the same basic structure, variations of some degrees are discernible, as seen for example in the finial and in the height and width of the shrine itself. Further variations may be noticed in the depiction of arch in each shrine. In addition, there is an attempt to represent architecture in Nepali vernacular at least in two examples. For instance, two paintings depict a type of architecture commonly found in Nepal. According to the label on one of the paintings the chaitya is identified with the Dharmarajika said to be located at Radha in Bengal. But the structure standing next to the chaitya does not appear to be a shrine. It rather looks like a dwelling house commonly found in Nepal. Similarly the other painting represents, according to its label, the Chandra Vihara in the city of Supaca. Although the present location of Supaca is unknown, the building, like its counterpart, shows a Nepali type of architecture with its projecting sloping roofs and a portico on the side.

While looking at these structures it can be said that they do not come to strike one as shrines in the sense that they appear in other examples. But again, except for a few exceptions, Buddhist temples in Nepal are not built in the typical Indian sikhara style. As the extant examples of Buddhist architecture in the Kathmandu Valley show, many of them are built in the same way as a dwelling house, simply distinguished by a gajur on the roof. In their projecting portico-like structure the paintings from the Cambridge Prajnaparamita compare well with the extant architecture found in the Kathmandu Valley. Such a relationship between the extant Nepali architecture and the paintings leads

one to believe that the model for some of the buildings in these paintings must have come from the Kathmandu Valley, the place where the manuscript was copied.

***ABSTRACTS OF PAPERS APPEARING ELSEWHERE**

NAFZIGER, DALE L., and GERALD E. REHKUGLER, Dept. of Agricultural Engineering, Cornell University, Waste Heat Utilization from the electric ARC Process for Ammonia Absorption Refrigeration in Nepal (paper No. 85-5503) presented at the 1985 Winter Meeting of the American Society of Agricultural Engineers. Copies available from American Society of Agricultural Engineers, 2950 Niles road, St. Joseph, MI 49085-9659.

Energy costs constrain Nepalese agriculture and fertilizer usage in particular. The electric arc process may loosen this constraint. This process produces large quantities of waste heat. Ammonia absorption refrigeration requires high-grade heat input. Laboratory experimentation combined these two technologies. Economic analysis examined the feasibility of implementing such technology in Nepal.