This excursion was concerned with the extent of the Pleistocene glaciation of the greatest upland and its associated mountain systems. Because of the international interest it was the best attended excursion of the Congress. This interest was put to the test, despite some previous warnings in reports of pre-Congress excursions, by the relatively high-costs, rather poor travel conditions on shaky buses, several overnight stays in military stations at over 4500 m, and very variable meals.

The discussions were spirited, and since on some of the days crossing the plateau the weather was extraordinarily fine, it was possible to make scientific observations even from the road. It is necessary to note first that opinions were divided on the theory of a former Tibetan ice-sheet advanced by the author on the basis of the findings of numerous previous expeditions. In particular some of the German participants, for example L. Eiseman (Altenburg) and K. Heine (Regensburg) spoke clearly, indeed vehemently, against the theory of a wide-spread ice-sheet. Against this, Quaternary geologists and geomorphologists from Scandinavia, Canada and the USA e.g. R. H. Lagerbäck (Uppsala), R.W. Barendregt (Alberta), prof. T. Lingquist (Stockholm) and others, showed themselves convinced in the discussion of the form existence of a Tibetan ice-sheet. Subsequently certain of them, e.g. T.H. Hughes (Maine), R.H. Lagerbäck and R.W. Barendregt, have confirmed their views in writing.

During the first part of the excursion form Xining (2000 m asl) to Koko Nor (Qinghai Hu, 2000 m asl) at high pass was crossed (3520 m asl) at the summit of which erratic material was seen. Here, on the north face of Riyou Shan (36°21'N, 101°12'E) the former valley glacier descended to at least 3100 m asl. Some of the Scandinavian and Canadian participants were of the opinion that the trough-shaped cross-profile and the accumulation of coarse block material indicated the lowest glacial terminus at 2800 m asl. Subsequently the route followed the S slopes of the Koko Nor, from were to be seen the glacial remnants of the old denudation surface of the 4500 m asl Koko Nor Shan (Qinghai Nanshan) with incised cirques (Botter type) and short troughs. The Koko Nor Shan (Qinghai Nanshan) were crossed by a pass cut in schist at over 4000 m, leading to the basin of Carka. Although the phylite surface was frost-roughened in many places, the glacial character remained widely clear. Because of the snow fall and the mass of snow lying on the surface of the valley glaciers, the steep slopes of the cirques were covered with several meters of snow, making a great deal of the landscape invisible. The only evidence of a former high-altitude ice-sheet was seen in the large moraines with their erratic content, overlying the slate bedrock. "(They were) the Chinese colleagues (Prof. Zheng Bening et al.) that these widespread moraines with their erratic content, overlying the slate bedrock. They (the Chinese colleagues) suggested alternatively that the moraines came not from Central Tibet, but from nearby lower-lying granite mountains, and relative to those mountains have been subsequently eroded. One is perhaps therefore entitled to think that the whole slope-system has been subsequently reversed, the former N-S fall, that is towards the high plateau, being replaced by a S-N fall, away from the high plateau. - On the plateau itself some participants recognised, in the rounded rock ridges, classical glaciogenic rock outcrops and polished thresholds with all the typical modifications of the bedrock, as well as ice-polished boulders with typical moraine deposits. Some Austrian and German participants were unable to accept this interpretation, but without being able to suggest an alternative explanation for the shaping of this type of landscape. Presumed dead-ice depressions were individually interpreted by some colleagues as soil basins, and others as large frost pools. But the attempt to recognise again a normal fluvial relief met with the difficulty that the characteristics of that type of relief were completely absent. Neither the numerous overdeepenings nor the widespread thin cover of diamicitic (unsorted) material, rich in fines, would accord with the fluvial interpretation. In particular, except in the higher reaches of the valley glaciers, the plains of the local tributary valleys, terraces are absent from this undulating hilly landscape. It is worth mentioning that American and Scandinavian colleagues, familiar with areas of former inland ice-sheets, had no intellectual difficulty in accepting as of glacial origin the high Tibetan relief, and in seeing its 'cleanliness', that is the poverty of detritus and gravels, as an indicator of inland ice. - The stage from Tou Tou river (4500 m asl) to Naghu led over the E part of the central Tibetan Tanggula Shan (6621 m high mountain group) with the watershed on this N-S alignment at 5300 m. The Chinese leaders of the excursion argued from radiometric age determinations of end-moraines, which were visible to the E of the route and directly marked the fore fields of the valley glaciers, that these moraines were of High Glacial age, and showed only a slightly greater glaciation than at present. In contrast the present author placed the alignment of erratic granite blocks, 200 to 300 m over the Tanggula Shan pass (32°50'N/91°50'E) in the deglaciation phase. That would entail the presence of an ice-sheet, covering the relief, with nearly smooth upper surface, reaching across the fluvial and ice divide. Much more discussion took place about the origins of the widespread granite boulder clay, and over the N-N alignment at 5300 m. Neither the numerous overdeepenings nor the widespread thin cover of diamicitic (unsorted) material, rich in fines, would accord with the fluvial interpretation. In particular, except in the higher reaches of the valley glaciers, the plains of the local tributary valleys, terraces are absent from this undulating hilly landscape.
covered with slightly sorted Late Glacial gravel sheets, rich in coarse debris, as well with glacial diamicton material, outwash on its upper surface. The last stopping place in a confluence area was devoted to the former glacial relief forms of three U-shaped valleys with lofty polished sides (30°N/90°40'E), 4100-3900 m asl.) With practically the former glacial relief forms of three U-shaped valleys with lofty polished sides, with glacial polishing.

It was very refreshing to visit the bazaars and the Potala itself in Lhasa there was lively discussion concerning the convergence of desglaciation, particularly effective in granite, with glacial polishing. It was very refreshing to visit the bazaars and the Potala itself in Lhasa, as one could be sure not to be distracted by any glacial-geological discussion. Nevertheless, even on that occasion, it was impossible to avoid an argument over the possibility of anthropogenic origins of glacial pot holes.

gtechnica, Germany 1993:
In Cologne the focus is on the map

International Cartographic Conference and German Cartography Congress
gtechnica - International Trade Fair and Congress for Geo-sciences and Technology - from 5th to 8th May 1993 in Cologne represents a special event for cartographers from all over the world: because the first week in May is also that time of the 16th International Cartographic Conference (ICC), which will be held from 3rd to 9th May, as well as the 42nd German Cartography Congress (DKT) from 3rd to 6th May 1993. Both events will be held at KölnMesse's Congress Centre East and thus in the direct proximity of gtechnica.

"Maps for Knowledge, Action and Development" is the ICC's general theme, with which the medium of the map, its increasingly varied contents and forms is characterized as the basis of knowledge of facts relating to the Earth's surface. With the key theme "German cartography in a European environment", the German Cartography Congress wishes to document its close relationship with the International Cartographic Conference.

Joint International Cartographic Congress
The organizers, the International Cartographic Association (JCA) and the German Society for Cartography (DGfK), have scheduled both events so that they can present themselves to the total of between 1,500 and 2,000 delegates who are expected to attend, as a joint International Cartographic Congress. This is also underlined by the joint opening ceremony, the focal point of which will be the official address by Professor Dr. David Rhind, general director of the Ordnance Survey on the subject of "Mapping for the new Millenium".

During the congress over 100 papers on the international programme and eight lectures at the German Cartography Congress will concern themselves with selected topics from topographical and thematic cartography, tourism and atlas cartography, from geo-information, navigation and environmental cartography. In addition, 16 commissions of the JCA and 11 working groups of the DGfK will report on their work in public meetings, accept contributions from the auditorium and stimulate a professional discussion.

gtechnica with over 500 suppliers
The congress delegates are entitled to visit gtechnica in exhibition halls 5 to 8 on all days without any further costs. In 25,000 sq.m. of exhibition space, more than 500 suppliers, including around 30% from abroad, will be presenting systems, equipment and processes, service and know-how for practically all geoscientific disciplines and geotechnical areas of application. They will cover a broad spectrum from the exploration and the preservation to the restoration of the biosphere Earth. Cartography will constitute a special focal point of the trade fair.

International Map Exhibition
The gtechnica visitors are, however, also invited to visit the international map exhibition of the International Cartographic Congress free of charge. Situated in the first floor foyer of the Congress Centre East, it will provide a wide overview of publications and the publishing of cartographic products from more than 40 of the world's countries. Over 50 cartographic publishing houses, public agencies and scientific institutes will be showing a representative cross-section of production and research.

Establishing the status quo in cartography
The professional background of both congresses is also the establishment of the status quo in cartography. Its modern function is to prepare maps as a means of information and communication, of orientation and planning for the varied requirements of our society and to make their use simpler. Cartography covers all stages of cartographic representation both in printed form and on the monitor. Cartography is thus a key part of the geo-information systems which are also among the most important sectors of the product range at gtechnica.

Typical cartographic products are topographical, national and city maps, maps for national defence, road and hiking maps, school maps. Mines of the Rheinische Braunkohlenwerke, to the State Geological Office and the North Rhine-Westphalia State Surveying Office and to the radio telescope in Effelsberg in the Eifel.

Further information, in particular, the leaflet "Invitation and programme" can be obtained from AKM Congress Service, Clarastr. 57, CH-4005 Basle, Switzerland Tel.: 4161/69 88 88. The season ticket costs DM 650,- (students: DM 200,-); the day ticket DM 250,- (students: DM 50,-).