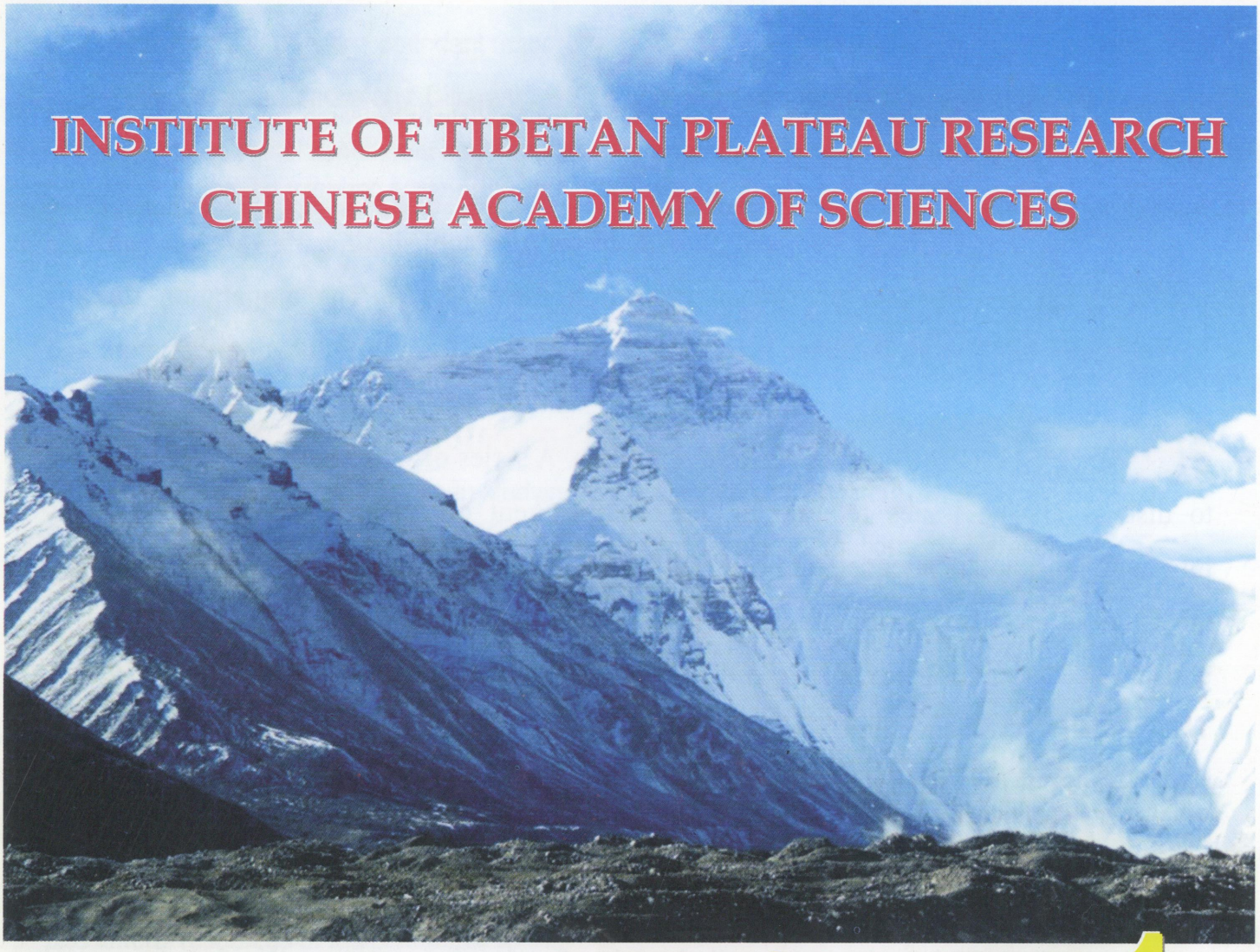
INSTITUTE OF TIBETAN PLATEAU RESEARCH
CHINESE ACADEMY OF SCIENCES



NEWSLETTER 1

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Preface

Tandong Yao, Director, Institute of Tibetan Plateau Research

At the beginning of 2002, the Chinese Academy of Sciences (*CAS*) formally declared the intention of establishing a new institution, the Institute of Tibetan Plateau Research (*ITP*). The preparation for this work has been active under the support from both the administrators and scientists, especially senior scholars involved in the research on the Tibetan Plateau for a long time. A series of workshops were held in 2002 to discuss all the issues relating to the establishment of *ITP*, in which many famous international scholars attended and contributed their ideas. At the same time, the President of the Chinese Academy of Sciences, Prof. Lu Yongxiang has since discussed this initiative with the leaders of some major scientific research organizations during his visit in Europe. The Ministry of Science and Technology (*MOST*) of China closely attached importance to the *ITP* and put forward plans and concrete supporting measures. Based on the regulations of the *MOST* and suggestions from international experts, the Chinese Academy of Sciences had announced the establishment of *ITP* in March, 2003.

The goal of *ITP* is an internationally high level scientific institution. We, therefore, need your sustained strong support and direction. In order to keep you current with the organization process of *ITP*, we will continuously report to you the progress and activities by providing updated "*ITP* Newsletter". It is hoped that the "*ITP* Newsletter" can be a bridge between you and *ITP*.

The Significance of Scientific Research in the Tibetan Plateau

As a special geological and geographical unit, also, a field laboratory for the research of geo-dynamics and global changes, the Tibetan Plateau, or "World Ridge", has unique position scientifically in the world. The Tibetan Plateau is the main water head of many rivers in China and Southeast Asia. The circulation system changes from a quasi-astronomic wind system to a monsoon system because of the uplifting of the Tibetan Plateau. The Tibetan Plateau directly affects the development and structure of the global climate and ecosystem. The cryosphere in

the Tibetan Plateau provides abundant resources for the study of paleoclimatology. Different climatic and ecological zones from southeast to northeast, from the tropical zone to ice fields come into being because of the drastic changes in altitude of the plateau. Furthermore, the plateau is incomparable for the co-existence of terrestrial ecosystem and biological species. So, it is an ideal place not only to study the interaction between the exchange of material and energy deep in the earth, but also to study eco-environment evolution and bio-diversity resources in an extreme environment.

The History of Scientific Research in the Tibetan Plateau

Scientists and explorers have been studying the Tibetan Plateau since the middle of the 19th century.

The major scientific goals were, in the 1950s-1960s, investigating the situation of agriculture, geology and mining in Tibet; and in the 1960s-1980s, studying the structure of the geosphere and geophysics, and the environment and natural resources of the plateau. After the 1990s, with more support from the Chinese government, Tibetan Plateau research has been transforming from investigation to monitoring, from qualitative analysis to quantitative analysis, from description study to process study, and from phenomenon study to mechanism study.

International cooperation has been active since the 1980s. Here are some examples of successful international cooperation: the Sino-Japan Expedition to West Kunlun Mountain Glacier, Sino-Japan Land-Atmospheric Process Study in the Tibetan Plateau, Sino-Germany Tibet Glacier Expedition, Sino-British Comprehensive Geological Investigation from Lhasa to Gomud and Joint Study on Natural Environment in the North part of Yulong Mountain, Sino-Canadian Study on "Diamond in Ultramafic Rocks of Ophiolite Zone in Tibet", Sino-US Study on Thermo-balance in Tibet, and Sino-Norway Study on Atmosphere Environment in Qomolangma. Some international projects, such as INDEPTH, TIBEX and CEOP, are still going on.

Current Key Issues of the Institute of Tibetan Plateau Research

1.Carrying out integrative and multi-disciplinary study on scientific problems

Is the mechanism of Tibetan Plateau uplift an equilibrium floatage rebound or a periodic uplift in different zones? Is the lift of the Tibetan Plateau the cause of the monsoon system? Is

the process between the Tibetan Plateau land surface and atmosphere a driver of Asian climatic change? How does the bio-system and species evolve in the extreme environment of the Tibetan Plateau? It is very difficult to answer these questions without integrative and multi-disciplinary research. The Institute of Tibetan Plateau Research will surely benefit from multi-disciplinary and long-term integrative investigation.

2.Building up a long-term, successive, and systematic monitoring network platform

Scientists from many countries have performed many observations and data collections. Now it is very urgent for us to build up a long-term, successive, and systematic monitoring network platform. The purpose of the platform is to deal with data, sample collection, and integration. Monitoring stations for different purposes are essential for the platform.

3.International scientific exchange

Many international agencies are organizing conferences or workshops to discuss the latest progresses in the study of the Tibetan Plateau and many scientists from different countries are planning more projects to study the Tibetan Plateau. There is, however, no special organization focusing on the study of the Tibetan Plateau. In order to coordinate research activities from different agencies and institutions more efficiently, a new institute is necessary and will be helpful.

Strategy of the Institute

1.Research

Aiming at global change, the Institute of Tibetan Plateau Research will focus on the study of geodynamics, environment change, the atmosphere and land surface process, and genetic resources in an extreme environment.

2.Coordination

The institute will coordinate long-term research activities, monitoring, and international cooperation relating to the Tibetan Plateau.

3.Observation

The institute will build up a monitoring network platform. At the same time, the institute will encourage international cooperation to co-build the monitoring network platform.

Objectives, Directions and Recent Activities

1.Objectives

- Geodynamics
- Global change in the Tibetan Plateau
- Biological adaptability and genetic resources in an extreme environment

2.Directions

- Geosphere structure and uplifting mechanism
- Uplifting process and environment of East Asia
- High resolution paleo-environment change
- Land surface system and process
- Atmospheric process
- Biological adaptability and genetic resources in an extreme environment

3.Recent activities

- Research Activities
  - Measuring deep structure in the Tibetan Plateau
  - Discovering key geological and landform processes and environment response
  - Clarifying climatic and environmental changes in past through studying modern processes and major climatic events
  - Carrying out study on the interaction among atmosphere, ice (water), land surface, and biology
  - Studying the impact of atmospheric circulation in the Tibetan Plateau on surrounding regions
  - Construction of a genetic resources bank relating to the Tibetan Plateau
- Monitoring network platform and Laboratories
  - Setting up a long-term, systematic, and successive monitoring network platform studying geophysics, atmosphere, snow-ice, land surface, and eco-environment
  - Data and sample bank
  - Laboratories
- Forming scientist groups
  - At the beginning of the establishment of the institute, four scientist groups are being planned to focus on related research areas, including geological structure and

process, environment change, atmosphere and land surface process, and genetic resources.

Frame of the Institute

The Institute of Tibetan Plateau Research consists of three campuses in Lhasa, Beijing, and Kunming.

The Lhasa campus is mainly for field work, field data collection, cooperative study, and scientific exchanging. It is to become an international observatory step by step.

The Beijing campus is mainly for laboratories, data analysis, sample storage, and related scientific activities.

The Kunming campus is managed by the Kunming Institute of Botany and focuses on genetic resources.

There will be 90 permanent positions (80 positions for Lhasa and Beijing campuses, 10 positions for Kunming campus) in the institute, including 13 administrator positions, 30 professor positions, 30 associate professor positions, and 17 technician positions.

Newsletter Editorial Board:

Chief Editor: Tandong Yao

Associate Editor: Xiaohan Liu, Xing Gao

Responsible Editor: Baosheng An

Contact Address:

P.O. Box 9825, Beijing 100029, P.R. China

Phone: +86-10-62008128

Fax: +86-10-62008428

E-mail: itp@mail.igcas.ac.cn