

## Prehistoric Commission

### *Current development – status as of 2000*

Since its foundation in the years 1886/87 the aims and tasks of the Commission have changed in more than one respect, most recently by the integration of the Commission for Celtic Studies at the beginning of 1998, as a result of which new focal research areas were established and defined. Thus, the three main prehistoric periods, the Palaeolithic, the Bronze Age and the Iron Age are now the main working areas, each with its own working groups.

The work of the Commission comprises the development and organization of projects and symposia as well as scientific responsibility for selected research projects according to the defined focal research areas. In addition to this, it is one of the main tasks of the Commission to publish monographs on finds and scientific results from research projects in the *Mitteilungen der Prähistorischen Kommission* (Publications of the Prehistoric Commission; MPK) series.

The Prehistoric Commission sees itself as a body which both promotes and undertakes research itself.

### *Future aims for Programme 2000*

The re-structuring of the Commission, begun in 1998, was concluded at the beginning of 1999. It was, however, followed by a period of consolidation and review that will finish for the present at the end of 2000. The major research projects of the Commission have thus been defined. New themes and aims will be determined by current scientific work, by new joint projects and possible changes in structure.

Generally it can be said that there will be wider access to pure scientific research in the direction of advisory capacities and public interest; for instance the expansion of the series to include encyclopaedias, dictionaries and publications of a more general nature, the generation and provision of databases (with fee-based access), image databases and bibliographies as well as the use of multi-media communications, such as on-line publications.

### *Research projects*

#### *Palaeolithic*

The focal research area of the Palaeolithic working group is on the project *Palaeolithic Industrial Circles*

*Before the Final Peak of Glaciations*, which is currently in progress and is, for the time being, scheduled for three years.

Its aim is to collect as much data as possible from the period from the end of the Aurignacien, through the Gravettien and up to the final peak of glaciations in order to create a comprehensive archaeological and paleo-ecological picture of this time.

For this project, well-known sites will be considered and the finds dealt with again. In addition, archaeological prospection will also be undertaken to locate new sites. Geo-scientific, paleontological and archaeological research methods will be employed in all these cases. Close co-operation exists with the Laboratory for Geophysics of the Institute of Geography and the Institute of Paleontology of the University of Vienna. This joint project will use state-of-the-art methods to record, document and examine the history of settlement and environment for the period from 32,000 to 20,000 BP at the famous prehistoric sites situated in the neighbourhood of the Pollauer Berge in Moravia.

The investigation of soils will be an important by-product for questions of landscape ecology and modern agricultural soil cultivation. Furthermore, the project will provide assistance to the Austrian Federal Office for the Conservation of Monuments in assessing Palaeolithic sites and setting up protective measures to safeguard endangered locations. In this connection, the database initiated for the Palaeolithic focal research project entitled *Sites of the Quaternary in Austria* is of importance. Parts of the database will be available on the Internet. For the time being, the *Literature on the Palaeolithic Age in Austria* is available on the homepage of the Prehistoric Commission.

An international colloquium is planned as the conclusion of the three-year project at which the results will be discussed. This will be the continuation of the Palaeolithic symposium *Palaeolithic Research in Austria – Position and Prospects*, which was organized by the Commission for the first time in 1999 and is set to become a regular event.

In its capacity as a central unit, the Palaeolithic working group intends to bring to a conclusion work on older finds from archaeological excavations and to coordinate further fieldwork. It is planned to widen the sphere of interest to the Palaeolithic cave sites in the Alps in co-operation with the Commission for Quaternary Research of the Austrian Academy of Sciences.

### Bronze Age

The Bronze Age working group will intensify its work on large settlements and burial grounds and publish its results. Sites that have been widely examined and therefore nearly completely excavated are particularly suitable for gaining new insights into chronology and aspects of social and cultural history. However, such extensive projects can only be completed within a reasonable period of time with a greater number of personnel and increased financial input.

A special focal area within this field of research is the period of the Late Bronze Age (Urnfield Culture), c. 1250–750 BC

For the first time in Austria a symposium on *Urnfield Culture in Austria – Position and Prospects* is planned which will unite Austrian and foreign specialists working on this period in relation to the Central European region. Furthermore a bibliography of the Urnfield Culture in Austria is in preparation which will be accessible on the homepage of the Prehistoric Commission.

Two of the main projects currently being undertaken by the Bronze Age working group are the completion of the publications on the hillfort at Thunau and the assessment of the Urnfield Culture burial site at Nussdorf ob der Traisen.

The hillfort at Thunau am Kamp has been excavated since 1965. Its strategically favourable position on the north-south route through the Kamp valley was used for the building of large rural settlements in the period of the Urnfield Culture and in the Early Middle Ages. Other finds were discovered from the Late Neolithic, the Hallstatt, Late La Tène and Germanic settlement periods. This site has been systematically documented and interpreted in a number of dissertations, a large interdisciplinary research project and in current work of the Prehistoric Commission. Currently manuscripts on the ceramics of the Urnfield Culture and the Slav period as well as botanical findings are waiting to be published, in print as well as on CD-ROM. The publications on selected findings from the settlement and fortification as well as the final overall appraisal of the Urnfield Culture site are in preparation.

Experimental archaeology and metallurgy have established themselves in the disciplines of prehistory and early medieval history during recent years and they have been increasingly taken into consideration in answering specific questions. An experimental project entitled *The Casting of Bronze in Clay Moulds* is being prepared in the Prehistoric Commission. This study was prompted by the clay moulds discovered at Thunau, found there in large numbers for the first time. On the basis of the *Urnfield Culture Burial Site of Nußdorf an der Traisen* it will be possible due to the great number of burials (411 graves) to evaluate a completely excavated burial site of the time between 1000 and 800 BC in eastern Austria for the first time. Here, questions relating to burial and grave-offering practices, bur-

ial rites, family and clan communities, as well as social structure and ultimately the cultural, mental and social background of the population of that time can be answered.

In the course of the documentation of finds and findings, 320 plates were produced using digital methods. This data is ready for print. Together with the Commission for Scientific Visualization of the Austrian Academy of Sciences, catalogue and image databases will be produced from these data. In addition, future collaborative projects will work on the digital mapping of the burial site, aiming for an inexpensive publication in print and a presentation on the web and/or on CD-ROM.

In January 2001 the project entitled *The Bronze Age on the Oberleiserberg*, conceived by the Commission, was started. The aim of this project is the treatment and assessment of the extensive Early and Late Bronze Age finds as well as the answer to the question of Bronze Age fortifications on the Oberleiserberg. To complete the work on the Bronze Age settlement of this major site in eastern Austria is of especial importance in that it will close a regional and chronological gap.

A further research project of the Commission, which is intended to revive the Academy's tradition of research into the mining industry, is the interdisciplinary project entitled *Bronze Age Copper Mining in the Arthurstollen*, being carried out in co-operation with the Salzburg Museum Carolino Augusteum. The Arthurstollen (Arthur tunnel) is situated in the Mitterberg chalcopyrite deposits. In this tunnel, prehistoric pits and tunnels have been excavated down to a depth as far as 200 metres below the surface, where a number of wooden beams have been preserved. The study of the techniques of Bronze Age mining is today possible only at the Arthurstollen site. At the same time it is the deepest surviving Bronze Age mining site in the area of the Eastern Alps. The aim of the project is a publication on Bronze Age copper mining.

Another project, as yet to be developed, is the analysis of the *Burial Site at Inzersdorf ob der Traisen*, a burial ground of the earlier Urnfield Culture in the central part of Lower Austria. The main problem here is that the finds of the 287 graves have not yet been fully cleaned and assembled.

### Iron Age

A third working group was created by the incorporation of the Celtic Commission into the Prehistoric Commission. This concerns itself with research on and publication of archaeological and epigraphical sources as well as historical documents from the La Tène period (Later Iron Age, c. 450–15 BC).

Focal research areas are *F.E.R.C.A.N. – Fontes Epigraphici Religionis Celticae Antiquae* and the project *Celtic Iron and Forging Technology in the Eastern Alps in the Time of the Oppida* as well as the production of a lexicon in two volumes on Celtic archaeology.

The international research project *F.E.R.C.AN.*, for which preparatory work has been in progress since 1998, has, since November 2000, been financed for the next three years partly by the Fund for the Advancement of Scientific Research. Since November 2000 the project has been housed in the premises of the Prehistoric Commission in the new building of the Austrian Academy of Sciences in Graz.

Among the primary sources for ancient Celtic culture, epigraphic monuments have a special status, because these examples of language and writing offer direct insight into the Celtic religion, its linguistic origin, its propagation and lastly its fusion with the realm of the Mediterranean gods. So far these monuments, which continue to grow in number with new finds, have not been subjected to thorough scholarly research, either in terms of adequate documentation, transcription and editing, or systematic analyses and interpretation.

One aim of the *F.E.R.C.AN.* project is the global recording of these epigraphic monuments, beginning with the province of Noricum, the editing of the ancient inscriptions relating to Celtic religion in a *CORPUS-F.E.R.C.AN.*, to be generated and published by the Academy, as well as a lexicon of the ancient Celtic gods and religious terms as the last stage of the project. The project is being accelerated by interdisciplinary and international co-operation, with detailed problems discussed on a specially dedicated platform on the Internet as well as at annual workshops. In the past two years close co-operation has evolved between project workers from seven European countries, who have developed guidelines for recording and editing these epigraphic sources for storage in database form.

Running parallel to the *F.E.R.C.AN.* project is the research project entitled *Ancient Written Sources for Celtic Religion*. Starting out from the standard work by Johannes Zwicker (published in 1934–1936), a new collection of literary sources for the Celtic religion in antiquity has been started. In addition to the sources researched by Zwicker, all references will be put in their literary and historical context and their sources subjected to scholarly analysis. The aim is to make accessible and evaluate these texts, both historically and in terms of history, the history of religion, as well as from the aspects of archaeology, philology and sociology. This will mean a critical overview of the often widely-scattered modern interpretations at the very latest level of knowledge. This collection of texts will, at the same time, facilitate access to this Greek and Latin material for associated disciplines.

As far as the *Celtic Iron and Forging Technology in the Eastern Alps in the Time of the Oppida* project is concerned, the primary aim is to analyse the techniques and spread of late Celtic smithies in the region of the Danube and the Carpathians. Starting out with recent Late La Tène (1<sup>st</sup> century BC) iron deposit finds – discovered in the fortifications at

Linz-Gründberg in the early summer of 1997 – basic technological data of the iron artefacts will be analysed together with metallurgists, and characteristics of the Celtic iron and forging technology worked out. Analyses of trace elements will be carried out with the help of a microprobe in the VOEST steel plant at Linz. Further scientific analyses, undertaken in co-operation with the VIAS research institute, will encompass assessment of metallographic microsections and texture profiles.

Furthermore, interdisciplinary discussion of *ferum noricum* will be initiated, with particular reference to its specific qualities in comparison with iron products of the same time from the neighbouring Celtic world in the Danube area. A corresponding colloquium will be held by the Prehistoric Commission at the conclusion of the two-year project. A follow-up project is being planned to compare these results with selected representative Early La Tène artefacts from iron deposits in Carinthia as well as Bavaria and Slovakia.

Preparations for the publication of the *Lexicon of Celtic Archaeology* in two volumes, which has been authorized by the Academy's School of Humanities and Social Sciences, are being finalized by an editorial working group. The project is scheduled for five years and will involve the participation of numerous international experts. In 2001 two symposia will be held in this connection. Special emphasis will be given to the issue of balance in the description of archaeological sites.

One publication project taken over from the Celtic Commission is nearing completion: the publication of the *Lexicon of Celtic Glosses in the Würzburg Codex of the Epistles of St. Paul* by the late S. Kavanagh (Cork, Ireland). The Würzburg glosses are among the most important ancient Irish language monuments. The manuscript, comprising about 1600 pages, will probably appear on CD-ROM.

#### *Other research activities*

Projects spanning various periods of time are connected both with publishing activities as well as the organization of symposia and the development of inter- and intradisciplinary research projects. The *Mitteilungen der Prähistorischen Kommission (MPK)* published by the Commission, are the only supra-regional series of monographs in Austria dealing with subjects in prehistory and early medieval history. Its publishing programme therefore includes all periods between the Palaeolithic and the Early Middle Ages. Since the initiation of its own editorial office in 1999 it has been able to continually increase the number of publications. Higher printing costs are compensated for by publishing in particular catalogues and volumes of illustrative plates in electronic media (CD-ROM), as well as by establishing co-operation with partner institutions working on related subjects. In a special series of the *MPK*, for instance, several volumes about the results of the Austrian excavations on the Caribbean island

of St Lucia are being published in co-operation with the Senckenberg Museum of Nature and Research Institute in Frankfurt, Germany.

Besides the publication of monographs on finds and the results of research projects, reports on symposia are being published regularly, in particular the proceedings of the annual symposium organized by the Commission on *Basic Problems Relating to Early Medieval Development in the Northern Central Danube Region*, organized jointly by the Academies of Sciences of the Czech Republic and Slovakia, as well as the Universities of Cologne, Kraków and Vienna.

Lexica and dictionaries, as well as general works that should generate more intensive dialogue with the interested general public have now been included in the programme of the MPK. Besides the above-mentioned publication projects for a lexicon of Celtic archaeology as well as of the ancient Celtic gods, general works, for instance on the subject *The Palaeolithic Age in Austria*, which are concerned with particular regions or time periods, are at the planning or production stage.

Another project that has just commenced is a *Dictionary of Technical Terms in Prehistory and Early Medieval History* that will appear in German and Polish – the first work of its kind. It is intended as an aid to understanding and translating Polish and German texts on prehistory and early medieval history.

As instructed by the Ministry of Science, the Commission has taken over administration of the development of the project entitled *Archaeological Prospection at Carnuntum*, a comprehensive stock-taking of the largest enclosed archaeological landscape in Austria, with the participation of a number of scientific and regional institutions.

In connection with this project the international symposium *Archaeological Prospection 2001*, a joint undertaking organized by the Prehistoric Commission, the University of Vienna and the Central Institute for Meteorology and Geodynamics, will take place on the premises of the Austrian Academy of Sciences in September 2001.

### Commission for Quaternary Research

The Commission tries to further all aspects of Austrian research into the Quaternary. The present focal research programme is devoted to the history of climate in the Würm cycle in the eastern Alps, the Riss-Würm interglacial period from about 130,000 years ago to today.

This research into the paleo-climate is based on materials that allow conclusions to be drawn on the former course of the climate, from the traces and sediments of the glaciers, rivers and lakes to the wind-borne loesses and the paleosoils developing on them, to the fossil-rich loams and sands of the many caves and fissures of the karst regions.

Although decisive progress has been made with respect to our knowledge of the course of the climate over the past 130,000 years, progress which is reflected in the publications of the commission (e.g. *Mitteilungen der Kommission für Quartärforschung*), numerous questions remain to be answered and new ones have arisen.

One of the Commission's most important tasks is to secure funding for absolute dating.

#### *Dating of glaciogenic sediments*

The Pleistocene and postglacial movements of the glaciers reflect the climatic conditions of the Eastern Alps. The dating of sediments that give information about their vicinity to the ice margin, help to reconstruct the movements of the glaciers.

#### *Dating of mass movements*

The dating of rockfalls and landslides yields important data about the history of the Alpine valleys in the Holocene era. Only when the age of such events can be determined can we discern climatological, petrological and tectonic connections.

#### *Loess stratigraphy*

With the help of sedimentological and paleontological analyses, as well as absolute dating of loess profiles, an attempt is being made to refine the stratigraphy of the Middle and Late Würm. Important data can be obtained for research into the Palaeolithic Age and paleoclimatology.

A further focal point of the Commission's financial programme is the funding of paleontological and archaeological excavations in caves. The current excavation programme comprises undertakings in the Alps (partly in cooperation with the Academy of Sciences of Slovakia) and in Greece (in cooperation with the Aristoteles University of Thessaloniki).

#### *Paleontological excavations in bear caves in the Eastern Alps*

Besides the continuation of excavations in the Schwabenreith Cave near Lunz and the Brettstein Cave in the Totes Gebirge mountain range, attempts will be made to find undisturbed fossil strata in other caves in which the evolution of the cave-bear can be documented and the history of climate can be followed for long periods, as in the Ramesch-Knochen Cave.

#### *Palynologic examinations in the Holocene Epoch of the Eastern Alps*

In this project, two problems in the eastern Alps are being examined: *The Development of the Holocene Tree Line* and *The Anthropogenic Changes of Vegetation in the Holocene Epoch*.

*Phylogeny and evolution of the felidae, hyaenidae and mustelidae*

Starting with the Lower and Middle Pleistocene faunae from Deutsch-Altenburg and Hundsheim, the history of these carnivores will be traced in terms of their evolution and ecological adaptation.

*The expansion of the research programme to the Middle Pleistocene*

*Dating*

The radio-carbon dating method reaches its limits with some sites of fossil finds, including the bear caves in the Alps. The determination of the evolutionary development level of the cave bears with the aid of morphodynamic analysis has shown that the regions of the High Alps (that is, above 2000 metres) were also habitable for the herbivorous cave bear in the early Würm and the Middle Pleistocene. To fix these warm periods chronologically the use and development of other physical methods would be very important. That applies especially to the uranium-series method, which brought sensational results for the Ramesch-Knochen Cave between 1980 and 1985. Uranium-thorium values were determined, corroborated by the uranium-protactinium data, which agree with the low evolution values. The therm-ion method represents a further development of this method. However, at present the technique is not yet available in Austria.

Problems of dating also exist for the lake sedimentation of the Middle Pleistocene and the early Würm periods at Lake Mond. Absolute dates could validate the monograph on this subject which has just gone to press (*Mitteilungen der Kommission für Quartärforschung*, vol. 12).

With the uranium-series method the period of about 300,000 to 5,000 BP can be covered. But a series of even older faunae cannot be examined using this method. This is especially important for the world-famous Hundsheim fissure in the Hainburger Berge.

The fauna, especially rich in species, with large and small mammals, but also molluscs and other invertebrates, tells us that at the time this fissure in eastern Lower Austria was filled in, the climate was warm and extremely favourable. Numerous steppe animals (rhinoceros, horses, cheetahs, hyaenas, hamsters and voles) in association with forest elements (deer, wild pigs, warmth-loving molluscs in a wide range of species) suggest that temperatures were higher than today.

However, we do not know exactly when this optimum climatic point was reached. Several warm phases of the so-called oxygen-isotope curve can be considered. There are very similar problems in the dating of other Pleistocene sites in Central Europe. Because of the lack of paleomagnetic events in the period from 790,000 till today, there are far fewer possibilities for dating in the Middle Pleistocene than in earlier periods of the Lower Pleistocene and the Pliocene.

*Middle Pleistocene vertebrate faunae in Central Europe*

Climatological and stratigraphical examinations of Central European faunae and sites of the Middle Pleistocene (790,000 to 130,000 BP).

This programme is being planned in co-operation with the University of Bonn. It includes further excavations of some already excavated sites in southern Germany as well as statistical examinations of chosen groups of mammals, such as bovidae, equidae, carnivora, soricidae and arvicolidae in terms of evolutionary development. An attempt will be made using new physical methods, to establish the time classification of key faunae such as those found at Hundsheim, Deutsch-Altenburg (Austria), Mauer, Voigtstedt, Kärzlich etc. (Germany), and to begin correlation with marine stratigraphies.

*Phylogeny and taxonomy of Alpine cave bears*

Cave bears of the Alps, and especially of the High Alps, are climate indicators, because these large herbivorous mammals were able to live not only in regions free of ice but also needed special forage plants whose growth depended on the climate. Paleontological cave research of the past decades has thus centred on the occurrence of Alpine cave bears.

Very interesting differences between individual groups have been established after comparison of metric and morphological characteristics which can only allow the interpretation that several times Alpine subspecies have branched off from the so-called lowland bears. Some bear populations even followed evolutionary lines of their own, so that even species barriers can be assumed.

A project will be devoted to this phenomenon to establish a complete database of the most important Alpine bear caves and generate comprehensive DNA analyses (in co-operation with the Max Planck Institute for Evolutionary Anthropology in Leipzig).

**Commission for the Paleontological and Stratigraphical Examination of Austria**

In the years 2001 to 2005 the research programme of the Commission will again concentrate on several fields.

The collection of data for the *Catalogus Fossilium Austriae (CFA)* will be continued as one of the main projects of the Commission. Whereas in the past volumes of this catalogue that covered a wide range of taxonomy were published, today such a procedure is outmoded and unfeasible in view of the growth in knowledge and increased specialization. Therefore the content and the format of the whole CFA series has begun to be changed radically. The volumes are to assume the character of monographs. Increased graphic documentation of fossils demands increased expenditure, but will serve to raise this series onto an international level.

Because of this, a comparable study in the field of taxonomy abroad has become necessary. As an example, a joint Sino-Austrian project with the Institute for Geology and Paleontology of the Akademie Sinica in Nanjing is taking place to study Devonian corals and Carboniferous calcareous algae and will be continued in 2001–02. The comparison of the taxonomy of both groups of fossils will help to establish connections in terms of paleo-bio-geography.

The *Oetyp* and *Austrofossil* (formerly *Littyp*) databases that were initiated in recent years will be continued and the data completed within the schedule of the Medium-term Research Programme.

The *Oetyp* fossil database has the task of recording all holotypes present in Austria and has been running since 1990. At present 46,000 data sets are available on the Internet (<http://www.oeaw.ac.at/oetyp/>). Existing data that is not yet available should be added to the database between 2001 and 2005. From then on only new data will be collected.

The *Austrofossil* database collects information on all fossils described or mentioned in Austria. This will serve as a basis for a global determination of biodiversities throughout the whole history of the earth within the framework of a worldwide collection of comparable data. This database is compatible with the *Earth History Database* supported by the National Science Foundation in the USA. The *Austrofossil* data can be also found on the Internet (<http://www.oeaw.ac.at/austrofossil/>).

The *Lithstat* project, whose objective is the establishment of a database for the recording and

review of Austrian litho-stratigraphy, has turned out to be a long-term project that goes beyond the limits and resources of this research institution. According to the recommendation of the Evaluation Commission, the data will in future be collected by the Geologische Bundesanstalt (Federal Institute of Geology). Only the scientific basis of the database, the preparation of litho-stratigraphic unities and the attendant supplementary information on biostratigraphy, magnetostratigraphy, sequence stratigraphy and chronostratigraphy will remain within the remit of the Commission.

A *Stratigraphic Encyclopaedia of Austria* will showcase the status quo of litho-stratigraphy in Austria and thus establish an appropriate modern basis for this branch of stratigraphy.

A central concern is the reissuing of the volume *Lexique Stratigraphique International* by O. Kühn, first published in 1954. Within the scope of this revised edition close cooperation with Austria's neighbouring states is planned in order to achieve cross-border equalization and adaptation of the lithostratigraphic units. The completion of this lexicon is planned for the end of the Medium-Term Research Programme in 2005.

All these above-mentioned projects aim at national and international cooperation with specialist researchers and institutions. On the national level, close links are maintained with the Federal Institute of Geology, the Geological Department of the Natural History Museum in Vienna and Austrian university institutes.