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Archaeozoology in Germany. Its Course of Development

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ABSTRACT: Although archaeozoology in Germany has a long tradition and has been broadly embedded in the biological sciences, it is currently undergoing a difficult period of mixed support. This paper describes the varied course of development of archaeozoology from the 1940's onward. In this period, archaeozoology grew from a phase of initial acceptance in universities, museums and monument protection departments to significant growth of the discipline and wide acceptance in archaeology in the 1970's and 1980's. Particular emphasis is placed on the question of whether, indeed, the politically caused separation of East and West had a major influence on archaeozoological research in the two Germanys. Following this, the development of archaeozoology after reunification, the major changes it brought to the field, and the reasons for those changes are considered.

KEY WORDS: ARCHAEOZOOLOGY, GERMANY, UNIVERSITIES, MONUMENT PROTECTION DEPARTMENTS, MUSEUMS, DEVELOPMENT IN EAST AND WEST GERMANY, REUNIFICATION, FUTURE PROSPECTS

RESUMEN: Aunque la Arqueozoología en Alemania tiene una larga tradición y ha estado intimamente conectada con las ciencias biológicas se encuentra en estos momentos en un periodo difícil con apoyos cambiantes. Este trabajo describe el variado acontecer de la Arqueozoología alemana desde los años 40. En este periodo la Arqueozoología pasó de una fase de aceptación inicial en Universidades, Museos y Departamentos de conservación del Patrimonio a una expansión de la disciplina dentro del campo de la Arqueología durante las décadas de los 70 y 80. Se ha hecho especial énfasis sobre si la separación política entre la Alemania del este y la del oeste tuvo una influencia diferencial sobre la investigación arqueozoológica. Como resultado de ésto el trabajo concluye considerando los cambios operados en el desarrollo de la Arqueozoología trás la reunificación y las razones que subyacen a dichos cambios.

PALABRAS CLAVE: ARQUEOZOOLOGÍA, ALEMANIA, UNIVERSIDADES, PATRIMONIO, MUSEOS, DESARROLLO EN LA ALEMANIA ORIENTAL Y OCCIDENTAL, REUNIFICACIÓN, FUTUROS PROSPECTOS

INTRODUCTION

The beginnings of archaeozoological research in Germany can be traced back to the 19th century. At that time individual scientists involved in various zoological disciplines began independent studies on animal skeletal remains found in archaeological contexts. These initial studies gradually led to a broad interest in prehistoric consumption residues. Yet, decades were to elapse before these sporadic undertakings were joined to form an interdisciplinary direction in research. Only after

World War II did the subject of archaeozoology as practised and taught today develop its own specific profile within the canon of humanities and sciences at German universities or at the departments of monument protection (*Denkmalpflege*). In view of this background, we, the authors, have chosen the end of the 1940s as a starting point for our description of German archaeozoology[1]. The years following the forties were marked politically by the division of the country in 1949, with the emergence of the *Bundesrepublik Deutschland* (Federal Republic of Germany) and the *Deutsche Demokratische Republik* (German Democratic Republic) and the development of different socio-political systems. The consequence was that during the period of the Cold War, and until the fall of the Berlin Wall in 1989, the discipline of archaeozoology followed an independent and separate course in the two Germanys. Reunification in 1990 brought about a restructuring of scientific research in the nine new German states of former East Germany and Berlin, a reorganisation which has had its effect on archaeozoological research as well. Therefore, the authors consider it recommendable to describe the development of archaeozoology separately for the area of former West Germany (C. Becker) and East Germany (N. Benecke) and conclude with a joint evaluation, summarising the situation before and after reunification[2].

ARCHAEOZOOLOGY IN WEST GERMANY

Although the country was suffering the aftermath of World War II and in a politically difficult and frugal state, institutions for research in the biological sciences were set up or organised anew in many parts of Germany through the initiative of a few individuals. These ventures set the course for archaeozoology, too. One such institution existed in the city of Kiel (Figure 1: 1), where WOLF HERRE arrived after the turmoils of the War. A student of biology and before the War assistant at the *Institut für Haustierkunde* (Institute for the Study of Domestic Animals) in Halle, W. Herre became provisional director of the Institute and Museum of Zoology in Kiel, which had been largely destroyed during the War. In 1945, with great commitment and vigorous help from students and volunteers, he initiated the rebuilding of the Institute. Shortly thereafter classes and instruction were held again. Two years later, this achievement as well as W. Herre's further efforts led to the establishment of the new *Institut für Haustierkunde* (Institute for the Study of Domestic Animals) at the Christian-Albrechts-University in Kiel (CAU Kiel). There, W. Herre could continue his initial, pre-war studies on domestic animals and their ancestral forms (e.g. Herre, 1949), work which also entailed the analysis of bone material. Together with G. Nobis, who had continued his studies in biology in Kiel immediately after the War, W. Herre built up an osteological comparative collection. The new institute drew the attention of other young scientists, like J. Boessneck (Munich) and H.-R. Stampfli (Bern, Switzerland) who came to Kiel for scientific contact. Courses in archaeozoology did not apply solely to the sites within Germany. In 1953 at the request of Kurt Bittel, a well-known archaeologists from the *Deutsches Archäologisches Institut* (DAI, German Institute of Archaeology), W. Herre travelled to Turkey to inspect the animal remains recovered in excavations at Bogazköy-Hattusa and Fikirtepe. Through anatomical and morphological comparisons, he sought to gain insight into the initial processes of domestication and the faunal history of the region. During the 1950s and 60s research in the *Institut für Haustierkunde* focussed mainly on the history of evolution of the domestic dogs, South American camelides and feral ovicaprines on the Galapagos Islands (Herre & Röhrs, 1973). In this association, attention was already directed towards questions concerning biometry, taxonomy and nomenclature of wild and domestic species (Bohlken, 1958, 1961). Archaeozoological activities in the Institute increased in 1963, when excavations were taken up again at the Viking settlement of Haithabu near Schleswig, at that time among the most extensive

[1] Our sincere thanks are extended to many colleagues, who have assisted us with valuable information, some of very personal nature. Without their contributions this article could not have been realised. We are also indebted to Emily Schalk who kindly translated the text into English.

[2] Due to the brevity of space at disposal for this article, reference can be made only to those colleagues who have been engaged with archaeozoological research over a longer period of time. Regrettably, persons who have carried out short term archaeozoological investigations in the form of free lance or contract work, cannot be accredited here. Limitation has also been necessary for the accompanying list of publications.

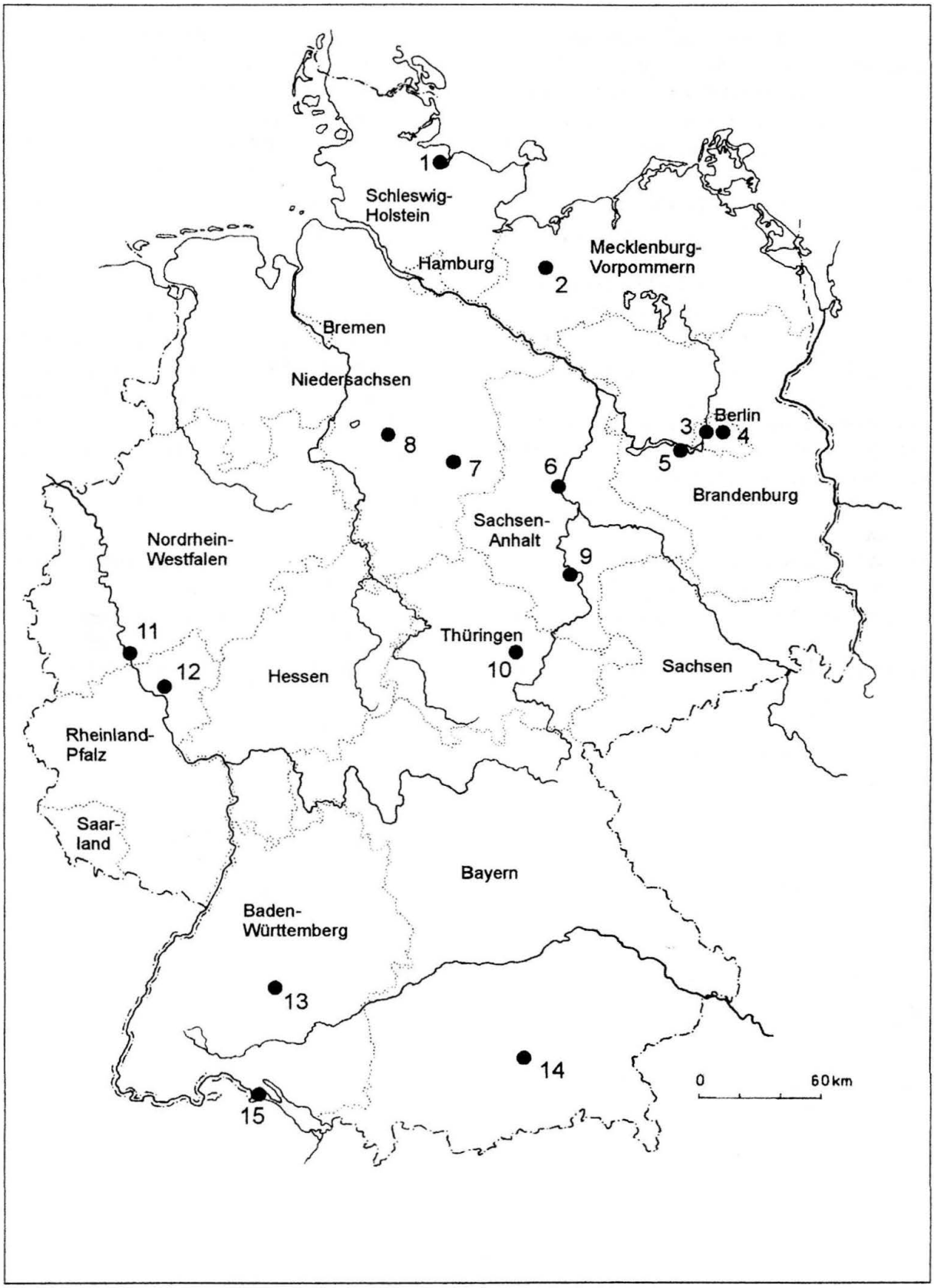

FIGURE 1

Map of Germany with the location of the German states and archaeozoological institutions, mentioned in the text. 1 Kiel, Schleswig; 2 Schwerin, 3 Berlin (Free University), 4 Berlin (DAI), 5 Wünsdorf near Potsdam, 6 Wolmirstedt/Magdeburg, 7 Braunschweig, 8 Hannover, 9 Halle, 10 Weimar, 11 Bonn, 12 Neuwied, 13 Tübingen, 14 München, 15 Konstanz (Drawing by W. Rust/DAI).

archaeological field projects pertaining to early medieval history in the whole of Europe.

Two years prior to the renewed excavations in Haithabu, HANS REICHSTEIN had entered the *Institut für Haustierkunde* in Kiel. Upon completing studies in biology, chemistry, physics and phytopathology at the Alexander von Humboldt University in East Berlin, H. Reichstein became assistant in the *Biologische Zentralanstalt* (Central Institute for Biology) in Kleinmachnow near Berlin, focussing on biological and ecological studies of small mammals. In 1961 he changed to the *Museum für Naturkunde* (Museum of Natural History) in East Berlin for a short period and attained the Ph.D. with a doctoral thesis on body growth and reproduction of the field mouse. In May 1961, three months before the Wall was erected, H. Reichstein fled to West Germany. In the following October he assumed a position in Kiel's *Institut für Haustierkunde* with a research project on skull morphology of rodents. H. Reichstein became curator in 1964 and during the next thirty years exerted great influence on archaeozoological research, at first alone and later together with Dirk Heinrich.

In 1967 an agreement was made between the CAU Kiel and the Archaeological State Museum in Schleswig (Figure 1: 1) to establish an interdisciplinary research centre, the *Archäologisch-Zoologische Arbeitsgruppe* (AZA, Archaeological-Zoological Study Group) within the premises of Schloß Gottorf in Schleswig. The spacious set-up, a large collection of mammals, later also of bird and fish skeletons, together with a good infrastructure ensured the joint project's success (Figure 2). Today the AZA is supported by the *Deutsche Forschungsgemeinschaft* (DFG, German Research Foundation) through financial support and part-time staff. The integrative effect of this institution is illustrated by the numerous and extensive reports on faunal analyses in archaeological journals, for example in *Berichte über die Ausgrabungen in Haithabu* (Schietzel, 1969-1998), or in *Ausgrabungen in Schleswig, Berichte und Studien* (Vogel, 1983-1992). In the AZA, H. Reichstein and D. Heinrich instructed students, acted as advisors for diploma and doctoral theses, and promoted research and publication of large complexes of bone material from prehistoric and early historical periods in northern Germany (for literature cf. Heinrich *et al.*, 1991). Here, particular note should be given to the encompassing works of H. Reichstein on the Viking settlement at Haithabu and the Germanic village of Feddersen-Wierde (Reichstein, 1991a, 1991b). In October 1994 H. Reichstein retired, whereupon, unfortunately, his position was not filled by a successor, but terminated.

As curator of the *Institut für Haustierkunde* and the AZA since 1974, the zoologist DIRK HEINRICH has concentrated on research in palaeo-ecology and -economy, the faunal history of northern Germany and palaeoichthyology (Heinrich, 1985, 1987, 1991). Through his efforts the AZA's osteological fish collection was enlarged extensively. With his habilitation[3] in summer 1996 and his continued employment, D. Heinrich provides fundamental support for archaeozoology in Germany. This despite the fact that aside from various students, D. Heinrich has only one technical assistant at his disposal. Through on-going intense co-operative work with a number of archaeological institutions, archaeozoological research in Kiel and Schleswig has explored all prehistoric periods in Schleswig-Holstein and the greater northern German region, as well as historic times (cf. project on Romanisation). This broad interdisciplinary coverage was conducive in establishing a course of study based on similar aspects at the CAU in Kiel. Hence, students of archaeology could choose zoology or archaeozoology as a minor subject. Conversely, students of biology could take archaeology as a minor subject and, for instance, use prehistoric bone material for their thesis. Why this arrangement deserves particular mention, will become obvious later on.

Many students and scientists have been engaged in research on prehistoric slaughter and consumption residue in the AZA in Schleswig. Among them is CORNELIA BECKER, who upon completing her studies in zoology, botany and anthropology, took coursework in archaeozoology under H. Reichstein. In addition, through research for her doctoral thesis (1975–1977) on domestic and wild pigs from the Viking settlement of Haithabu, she gained valuable experience from an archaeological perspective (Becker, 1980). This work was followed in 1978 by a research project, financed by the Canton Bern/Switzerland, on animal remains from

[3] (a second doctoral degree which enables a German scientist to achieve a professorship).

FIGURE 2

The Laboratory of the *Archäologisch-Zoologische Arbeitsgruppe* in Schleswig in 1980. Photo: Courtesy of the Archaeological State Museum, Schleswig.

the Swiss Neolithic lake-site of Twann. As guest colleague, C. Becker analysed this material in the well-equipped facilities of the AZA. Only through this agency and collaborative work with FRIEDERIKE JOHANNSON (now in Göteborg, Sweden) could the analysis of c. 240,000 finds have been accomplished within a 2 1/2 year time period, particularly since all documentation was hand-written and the calculation of data was also done by hand (Becker, 1981; Becker & Johansson, 1981). For her next major project, at Kastanas, a Bronze- and Iron Age tell-site in Greece (Becker, 1986), the handling of large amounts of data lead to a highly codified and systematic computerized recording system[4]. During winter-semester 1983/84 C. Becker assumed a position in the scientific staff of the *Institut für Prähistorische Archäologie* (Institute of Prehistoric Archaeology, formerly *Seminar für Ur- und Frühgeschichte*) of the *Freie Universität* (Free University) in West Berlin (Figure 1: 3). The creation of this position was achieved through the initiative of the Institute's director, Professor Bernhard Hänsel, who at that time already considered the application of archaeozoological analysis in archaeological research as indispensable. Despite initial hurtles, C. Becker built up her work facilities in the relatively small and strictly archaeologically oriented Institute. Within this sphere she has analysed animal bone material from a total of 13 projects in Germany, south-eastern Europe and the Near East. These include not only the Institute's own projects in Greece (Ajios Mamas), Serbia

[4] In 1981 Michael Gebühr, an archaeologist in Schleswig, was kind enough to develop a specific program which was particularly well-suited to the Kastanas data.

(Feudvar), Croatia (Monkodonja) and Germany (Peissen, Boyneburg), but also projects in Jordan (Basta), Syria (Raqqa, Tell Bderi, Tell Schech Hamad), Greece (Akrotiri/Thera, Platia Magoula Zarkou) and Romania (Poiana-Ampoiului, Livezile, Sarata-Monteoru, Naeni-Zanoaga) conducted by other archaeological institutions associated with the Berlin Institute (Becker, 1994, 1997, 1998a, 1999a, 1999b, 2001). In addition, scholastic coursework and instruction are a substantial part of her work. Daily encounters with archaeologists and participation in many excavations have developed a strong leaning towards prehistory (Becker, 1993, 1998b, 1998c, 2000), and joint projects have brought about a close association of archaeozoology with anthropology and botany. In view of the broad scope of material and related teaching duties associated with this position, and the potential therein, it is inconceivable that the Free University Berlin has, as of the year 2000, reclassified the position of an archaeozoologist as non-essential and may well terminate it without replacement.

During the post-war era a further 'pillar of archaeozoology' was built in Munich, southern Germany, by JOACHIM BOESSNECK (Figure 1: 14). Born in Saxony, J. Boessneck studied veterinary sciences and zoology in Kiel and Munich after World War II and completed his Ph.D. in 1951 with a dissertation on "*Haustiere in Altägypten*" (Domestic Animals in Ancient Egypt). J. Boessneck finished the habilitation in 1957 with his opus "*Zur Entwicklung vor- und frühgeschichtlicher Haus- und Wildtiere Bayerns im Rahmen der gleichzeitigen Tierwelt Mitteleuropas*" (The development of pre- and protohistoric domestic and wild animals within the context of coeval fauna in Central Europe). 1953–1965 he was on the staff of the *Institut für Tieranatomie* (Institute of Animal Anatomy) at the Ludwig-Maximilian-University in Munich. Aside from conducting coursework and instruction for students of veterinary medicine, J. Boessneck took great interest in the investigation of skeletal remains of prehistoric animals, a topic that through its cultural and historical context was fascinating to him. In 1965 he founded the *Institut für Palaeoanatomie, Domestikationsforschung und Geschichte der Tiermedizin* (Institute for Palaeoanatomy, Research on Domestication and Veterinary History). This institution represented a unique combination of subjects, a situation that would exert great influence on the direction of research in Munich. Initially, J. Boessneck concentrated research on animal bone remains from the Celtic oppidum Manching, which became the subject of a number of doctoral theses. In the following decades a total of forty large faunal complexes, most recovered from the area of southern Germany, were also investigated as part of such coursework (for example, material from the renowned Celtic site of Heuneburg on the upper Danube River). Moreover, J. Boessneck expanded the sphere of research to the Mediterranean area, including Greece, the Iberian Peninsula (cf. the series of publications "*Studien über frühe Tierknochenfunde von der Iberischen Halbinsel*", in collaboration with the DAI in Madrid, Spain), the Near East and Egypt (for an overview of the resultant literature see publications on the occasion of the Institute's 20th and 25th anniversary: von den Driesch & Schäffer, 1985; Boessneck, 1990). In addition, one of the most comprehensive collections in Europe of skeletal material from mammals, birds and fish (a total of c. 18,500 vertebrates encompassing more than 2,800 species, including c. 3,100 fish skeletons from over 750 species) was built up[5]. Besides numerous dissertations, monographs and papers, various anatomical descriptive works concerning the distinction between closely related species, starting with sheep and goat (Boessneck *et al.*, 1964), appeared. This direction in research has continued to the present, as exemplified by atlases on the distinction between one-humped and Bactrian camels (Steiger, 1990), between African and Asian bovids (Peters *et al.*, 1997; Götze, 1998) and species of pelicans (Lorch, 1992). A similar osteological treatise on fish species from the Nile is in preparation. In the Munich Institute the instruction of students of veterinary medicine in comparative anatomy and the cultural history of domestic animals took priority. Only upon completion of the Ph.D. degree they commenced with their occupation as veterinarian. Subsequently, some of them became archaeozoologists, as for instance H.-P. Uerpmann (Tübingen) and M. Kokabi (Konstanz), while others devoted their attention to the study of the history of veterinary medicine (J. Schäffer, Hannover).

[5] The scientific importance of this collection led to the establishment of the *Staatssammlung für Anthropologie und Paläonatomie des Bayerischen Staates* in the year 2000.

Together with J. Boessneck the personage of ANGELA VON DEN DRIESCH, who joined the Munich group in 1965, must be named. She too had previously studied veterinary medicine but soon found great interest in analysing prehistoric animal bones, particularly material from fish and birds. With her habilitation she continued a series of works on the development of the fauna in Spain during the Copper- and Bronze Age (von den Driesch, 1972). Methodologically seminal are her contributions on traces of butchering on bones (von den Driesch & Boessneck, 1975) and techniques in measurement (von den Driesch, 1976). Together with their students, J. Boessneck and A. von den Driesch carried out archaeozoological research in Europe, Africa (Egypt, Sudan, Tunisia and South Africa), the Near East (Turkey, Syria, Israel, Iraq, Iran, Jordan, the United Arab Emirates and Yemen) and Central Asia (Nepal and Mongolia), covering a time span from the Late Pleistocene to the Medieval period (cf. bibliography in ArchaeoZoologica IV/1, 1991, 131–141 and in the "*Festschrift für Angela von den Driesch*": Becker *et al.*, 1999: 25–36). The history of veterinary medicine profited under the new impulses as well (von den Driesch, 1989). Texts dating from the past centuries in Europe, the Orient and Asia concerning veterinary treatment were translated, unravelled and interpreted. In 1993 A. von den Driesch succeeded J. Boessneck (who died in 1991) and directed the Institute until her retirement in autumn 1999.

A few months after A. von den Driesch's retirement JORIS PETERS was named as her successor, and at that time the Institute's name was altered to "*Institut für Paläoanatomie und Geschichte der Tiermedizin*". J. Peters had studied in Gent/Belgium, where he attained his Ph.D. with the doctoral thesis "*Beitrag zur Archäozoologie von Ägypten und Sudan*". In 1987 he became scientific assistant in the Munich Institute. His particular specialisation fostered more in depth research on the African continent (e.g. Peters, 1995). J. Peters' habilitation on animal husbandry and breeding in Roman times represents a successful synthesis of archaeozoological, written and figural sources (Peters, 1998).

After four decades of existence an institution expectedly changes in appearance. In the Munich Institute time-honoured and -tested methods of work have always been employed, yet recent times have seen new approaches to research, ones that are oriented methodologically towards new trends within archaeology. In the future the Munich Institute intends to focus on questions about early domestication processes in the Fertile Crescent (Peters *et al.*, 1999). Additionally, particular zoomorphological and phylogenetic investigations on ungulates, climatic and environmental research during the late Quarternary in North Africa, as well as analyses of the fauna of Central Asia are planned. The investigation of the history of veterinary medicine will continue, and be further intensified through the engagement of specially trained scientists. Furthermore, collaborative work with anthropologists such as Prof. Dr. Gisela Grupe (Munich) has opened new areas of research. Among these are the use of histological methods in determining species, age and diagnosis of diseases as well as chemo-analytical methods using trace element- and isotopic measurements for determining the geographical origin of domestic animals and reconstructing landscapes and environments. Additional colleagues in the Munich Institute, alongside J. Peters and A. von den Driesch (who is still involved in current projects), are HENRIETTE MANHARDT (archaeozoology, cf. Manhardt, 1998) and VERONIKA WEIDENHÖFER (history of veterinary medicine). Two scientists on work contracts are also engaged in the Institute's own projects as well as the analysis of animal skeletal remains submitted by the DAI, various state offices for *Denkmalpflege*, and the archaeological departments of universities and museums. The continuation of the Institute in Munich has provided an important basis for the future of archaeozoology in Germany. Contact between archaeology and the biological sciences will continue, even though – contrary to Kiel and Tübingen – it is primarily students of natural sciences and only a few in prehistoric archaeology who are being schooled in osteology. In addition, at the Ludwig-Maximilian-University in Munich those students enrolled in archaeology can select the subject of archaeozoology for final examination, an option that has increased in popularity in recent times.

Tübingen, another pillar of archaeozoology in Germany (Figure 1: 13), is associated with the name HANS-PETER UERPMANN. His study of veterinary medicine in Munich entailed instruction in osteology under J. Boessneck and the completion of his Ph.D. (Uerpmann, 1971). Thereafter H.-P. Uerpmann studied prehistoric archaeology in Tübingen and Freiburg, concluding with a second Ph.D. (Uerpmann, 1979). From 1972 to 1988 he worked on the "*Tübinger Atlas des Vorderen*

Orients, in which, most importantly, geographical, historical and cultural distribution maps of the Near East were made. These projects resulted in several comprehensive zoo-geographical, ecological and archaeozoological oriented compilations of data covering the eastern Mediterranean and regions of bordering south-western Asia, focussing in particular on ungulates (Uerpmann, 1987), equids (Meadow & Uerpmann, 1986, 1991) and the environmental history of the Near East in general (Frey & Uerpmann, 1981). During the winter semester 1989/90 H.-P. Uerpmann received a chair as professor of archaeobiology at the *Institut für Ur- und Frühgeschichte und Archäologie des Mittelalters* (Institute of Prehistory and Early History and Medieval Archaeology) at the Eberhard-Karls-University in Tübingen. The laboratory and facilities for archaeozoology used in the SFB 19 were expanded, with emphasis on research and excavations in the Near East, especially Turkey (Troy) and the Arabian peninsula (United Arab Emirates). Today, students in all phases of study are engaged in laboratory work, co-ordinated and guided solely by H.-P. Uerpmann and his wife MARGARETHE UERPMANN, who as an archaeologist has also been engaged in the field of archaeozoology and has assisted in various projects and publications (Uerpmann, 1993; van Neer & Uerpmann, 1998). From 1994 to 2000 H.-P. Uerpmann participated in the SFB 275, funded by the *Deutsche Forschungsgemeinschaft* (DFG) on "*Klimagesteuerte Prozesse in känozooischen Geo-Ökosystemen*" (climate-oriented processes in cenozoic geo- and ecological systems). Research into climatic determinates of the size of reindeer and wild horses and on climatic indicators in the chemistry of animal bones have had predominance.

The integration of archaeozoology into the program of study in Tübingen has taken a different course than in Kiel. In Tübingen archaeozoology is incorporated into archaeological coursework from the very beginning; lectures and seminars in archaeozoology constitute an integral and basic part of the study of prehistory, and are not separated as minor subjects. In advanced stages of study more intensified work in the sphere of archaeozology is possible, such as participation in excavations and fieldwork-analyses of bone material. Therewith the study of archaeology gained a great deal from natural sciences. After H.-P. Uerpmann's retirement in 2006 the future of archaeozoology in Tübingen will depend on a competent successor. According to the plans of the School of Geosciences in Tübingen University, H.-P. Uerpmann's position should be occupied by an archaeobiologist, who is proficient in archaeozoology and/or archaeobotany.

The emergence and institutionalisation of archaeozoology in the state of Baden-Württemberg took a different path. There, osteology was integrated with the *Landesdenkmalamt Baden-Württemberg* for more than 20 years (Figure 1: 15). After his study of veterinary medicine and osteological training in Munich, MUSTEFA KOKABI was consultant for osteology and archaeozoology from 1981 to 1999. He was responsible for the scientific investigation and publication of animal remains retrieved from excavations of the *Landesdenkmalamt*, and numerous articles and works appeared under his stewardship. Particular emphasis was placed on bone material from the Neolithic period (e.g. the Michelsberg culture), the pre-Roman Iron Age, and the Roman period (Kokabi, 1982, 1988a, 1988b, 1990). Moreover, M. Kokabi organised an osteological laboratory with a bone collection for comparative studies in Konstanz as well as an osteological archive in Rottenberg am Neckar, in which excavated and analysed skeletal remains of animals and humans could be stored. Since 1994 M. Kokabi has been an honorary professor in the *Institut für Vor- und Frühgeschichte* at Bonn University. In 1993 he organised a large meeting of osteologists and anthropologists (Figure 3), and one year later the 7th International Congress of the International Council of Archaeozoology (ICAZ), both in Konstanz.

In the laboratories of the *Landesdenkmalamt Baden-Württemberg* histological analysis of bone material is carried out, along with more conventional osteological examination. This line of research has been emphasised by ELISABETH STEPHAN, who joined the laboratories in November 2000, after M. Kokabi's retirement due to illness. E. Stephan's initial field of study was in bio-engineering, followed by a further study in Tübingen in prehistory and early history with particular emphasis on archaeozoology. She completed her second university study program with a Ph.D. degree in 1998 and a doctoral thesis on oxygen isotopes in bones (Stephan, 1999). Her future duties will primarily involve the archaeozoological management and study of bone material recovered from local excavations.

A unique situation has existed for several decades with respect to education in osteology at the

FIGURE 3

Konstanz 1993. Archaeozoologists and anthropologists at the conference (on behalf of the late J. Boessneck). Photo: Courtesy of the *Landesamt* Konstanz.

Technische Universität in Braunschweig (Figure 1: 7). There lectures, seminars and practical courses are offered by the Institute of Zoology within the sphere of anthropology by the anthropologist EBERHARD MAY. E. May himself has dealt with various archaeozoological materials and authored several publications (cf. May, 1964, 1969). One of his areas of interest concerns the calculation of whithers height through statistical analysis of skeletal measurements (May, 1967).

A further example of an highly unusual development in archaeozoology in Germany is presented by the professional career of GÜNTER NOBIS. G. Nobis studied at the CAU Kiel under W. Herre, and attained a Ph.D. in 1948 with a thesis on morphological and physiological development with respect to the emergence of species. In 1949 he became scientific assistant at the *Institut für Haustierkunde* in Kiel. Later he decided to enter the field of public school education, and completed a teachering degree in 1954. At the same time, however, he accepted a teaching contract at the Kiel Institute. Despite his many activities, G. Nobis never lost interest in faunal material. From 1965 to 1968 he wrote his habilitation "*Vom Wildpferd zum Hauspferd*" (Nobis, 1971) and in 1972 he was called as extra-curricular professor to the University in Köln. Thereafter G. Nobis transferred 1977 as curator to the *Zoologisches Forschungsinstitut und Museum Alexander-Koenig* in Bonn (Figure 1: 11), where he was director from 1979–1987. In 1992 he established a research institute for archaeozoology in Pyla, Greece (Nobis, 1992). Through his professional work as an archaeozoologist G. Nobis has been active in many countries, including Jordan, Tunesia, Bulgaria and Greece (Nobis, 1976/77, 1981, 1988, 1998). In 2001 G. Nobis will celebrate his 80th birthday, and the future of archaeozoology in the larger Bonn area stands in question. It is uncertain whether or

not another zoologist will follow in Nobis' footsteps. Still, there is interest in continuing Nobis' position, for a collaborative bond has long existed between the Museum and the *Institut für Paläontologie* in Bonn, the *Institut für Ur-und Frühgeschichte* in Köln, the study group of Prof. G. Bosinski (s. below) in Neuwied and the *Kommission für Allgemeine und Vergleichende Archäologie* (KAVA) in Bonn. Since 1995 the KAVA has conducted a research project on prehistoric cultures in the Maghreb/Morocco, dating to late and middle Palaeolithic periods, with special focus on the environmental development in the Rif Oriental. The abundant faunal remains which were produced are being analysed by RAINER HUTTERER from the Alexander-Koenig Museum/Bonn together with osteologists from Morocco (Hutterer & Mouhcine, 2000).

It should be noted that there are researchers in West Germany who are concerned in particular with zoological complexes from the Palaeolithic and Mesolithic periods (*Forschungsinstitut für Ur- und Frühgeschichte im Bereich Altsteinzeit*, Neuwied; Figure 1: 12). For nearly 15 years MARTIN STREET and other specialists have conducted investigations in the Rheinland (Neuwieder Becken; Street & Baales, 1999). Osteological work in Niedersachsen follows a similar direction, where ULRICH STAESCHE has worked for several years in the *Landesamt für Bodenforschung* in Hannover (Figure 1: 8; Staesche, 1991).

It is likewise necessary to point out that archaeozoologists in West Germany are indebted for valuable, fundamental data to colleagues from the discipline of veterinary medicine, many of whom have analysed little or no prehistoric bone material. This applies for instance to KARL-HEINZ HABERMEHL from the *Veterinär-Medizinisches Institut* of the Justus-Liebig-University in Gießen, who has published two indispensable and much quoted contributions on age determination in wild and domestic animals (Habermehl, 1975, 1985).

ARCHAEOZOOLOGY IN EAST GERMANY

In East Germany, that is the area of the former German Democratic Republic, now the nine new states in Germany, the integration of archaeozoology into research and teaching took a number of varied and different paths, yet many were quite similar to developments in West Germany. This especially applies to the monument protection departments (*Landesdenkmalämter*), the universities and other non-scholastic institutions. The *Landesdenkmalämter* that now maintain or have maintained positions for archaeozoologists over a long period of time are located in Schwerin, which is responsible for the area of Mecklenburg-Vorpommern; in Halle, which covers the area of Sachsen-Anhalt; in Wünsdorf near Potsdam, covering Brandenburg; and in Weimar for Thüringen (Figure 1).

Within the area of *Mecklenburg-Vorpommern,* (Figure 1: 2), numerous investigations on animal remains from archaeological excavations were initially carried out by OTTO GEHL. O. Gehl, educated in geology, was not permanently employed at a museum, but instead accomplished his studies on the basis of work-contracts. Concentrating on material from the Mesolithic, Neolithic and Medieval periods, his most well known publications include investigations of animal remains from the early Mesolithic station at Hohen-Viecheln and the early Medieval settlement of Groß Raden (Gehl, 1961, 1981). In 1980 the Schwerin Museum created a permanent position for an archaeozoologist which was filled by URSULA LEHMKUHL. A student of geology and active for many years in the *Geologisches Landesamt*, U. Lehmkuhl was trained in archaeozoological methods by O. Gehl. In the 1980s and early 1990s she published many studies concerning bone artifacts, as well as faunal remains from settlements and graves of various chronological periods (Lehmkuhl, 1985, 1990). With the restructuring of the Schwerin Museum following reunification, the position of an archaeozoologist was unfortunately cancelled. Today, the *Landesamt* is endeavouring to establish a position for archaeozoological research. Thus, after an interruption of almost ten years, U. Lehmkuhl is once again carrying out research, although now on a contract basis.

The former *Museum für Ur- und Frühgeschichte Potsdam*, today the *Brandenburgisches Landesamt für Denkmalpflege und Archäologisches Landesmuseum* with it's head office in Wünsdorf near Potsdam, made permanent provisions for archaeozoology in 1970 (Figure 1: 5). This position was taken by LOTHAR TEICHERT, who had completed a doctorate in agricultural science and educated oncoming agriculturalists for several years. His interest in the study of animal skeletal remains was awakened by his brother, Manfred Teichert. Since the *Landesamt* did not provide suitable workspace

nor a bone collection for comparative studies, during his term of office Lothar Teichert spent most of his time in the Kühn Museum of the University in Halle where his brother was curator and where he actually resided (s. below). A primary area of L. Teichert's research was the investigation of animal cremations from Neolithic and Bronze Age cemeteries (Teichert, 1975). In addition, he worked on large complexes of material from settlement excavations such as the Mesolithic site at Friesack and the early Medieval settlements at Brandenburg and Wiesenau (Teichert, 1988, 1993). In 1996, upon his retirement, L. Teichert's position in archaeozoology at the *Landesamt* was assumed by SUSANNE HANIK, a biologist specialising in zoology and anthropology (Hanik, 1999).

The beginnings of archaeozoological research in the present *Landesamt für Archäologische Denkmalpflege Sachsen-Anhalt* in Halle (Figure 1: 9), formerly the *Landesmuseum für Vorgeschichte*, are closely associated with the name HANNS-HERMANN MÜLLER. Upon completing his study of biology in Halle (1950–1954), H.-H. Müller commenced scientific activities at the *Landesmuseum*, where his first research was on domestic animals from the *Bandkeramik* culture in central Germany. He completed this work, and published a monograph (Müller, 1964) which today is still one of the standard works on the Neolithic, for which he achieved a Ph.D. degree in 1962. Two years prior to this H.-H. Müller had already moved to East Berlin (s. below). After a break of almost twenty years the *Landesmuseum für Vorgeschichte* was prepared to engage an archaeozoologist once again. Starting in 1981, his position was occupied by HANS-JÜRGEN DÖHLE, who likewise had studied biology and osteology in Halle. Animal remains from excavations in Sachsen-Anhalt formed the primary basis of H.-J. Döhle's research. With his work on animal remains from the *Bandkeramik* settlement at Eilsleben, H.-J. Döhle received a doctoral degree in 1993 (Döhle, 1994). In recent years he has held lectures and practical courses in archaeozoology in the department of Pre- and Protohistory at the University in Leipzig.

In addition to the *Landesamt für Archäologische Denkmalpflege Sachsen-Anhalt,* a second institution based in Halle has been involved in archaeozoological research for decades. This is the *Museum für Haustierkunde* in the *Institut für Tierzucht* of the Martin-Luther-University in Halle-Wittenberg (Figure 1: 9). This prominent institution, whose history can be traced to the activities of the scientist and agriculturist Julius Kühn in 1865 to 1888, enjoys a long and varied history, associated with the names of many well-known scholars (Figure 4). In the late 1950's, after completing his studies and doctorate in agricultural science, MANFRED TEICHERT began research on animal remains from archaeological excavations in Halle. His first major project dealt with faunal remains from a Germanic sacrificial bog and lake sanctuary in Oberdorla/Thüringen (Teichert, 1974). These studies were enhanced by the *Museum für Haustierkunde's* comparative skeletal collection, which J. Kühn had initiated. The collection was later expanded, explicitly to meet the needs of archaeozoological research. Today it represents one of the renowned comparative collections of vertebrate fauna in Germany and is particularly strong in domestic species. M. Teichert focussed primarily on analysing material dating from the Bronze Age to the Roman Imperial period, and above all on finds from Thüringen, Sachsen-Anhalt and Brandenburg. In addition, he published important methodological treatises. One of these was a joint investigation on the distinguishing morphological features of sheep and goat skeletal elements, which he carried out in collaboration with J. Boessneck and H.-H. Müller; the Julius-Kühn collection, with its wealth of skeletal material, greatly augmented the study (Boessneck *et al.*, 1964). In following years, articles appeared on calculating whither heights from skeletal remains of pigs (Teichert, 1969) and sheep (Teichert, 1975). In the years prior to his retirement M. Teichert, who had completed completed his habilitation in 1966 and had been named curator of the Julius-Kühn Collection in 1970, became greatly involved with the renewal and improvement of the Kühn Museum. Using the Museum's skeletal collection, the long history of domesticated animals can be traced almost continuously, from wild progenitors to early prehistoric domesticates, through older local breeds of the 19th century to the hybrids of modern times. For several years, M. Teichert also lectured on the history of domestic animals as part of courses offered in agriculture. Since 1994 JOACHIM WUSSOW, with a Ph.D. in biology, holds the position of curator at the *Museum für Haustierkunde*. Along with his duties in the museum and instruction in courses, J. Wussow carries out a limited amount of archaeolozoological research. Because of its extensive and unique collection of animal skeletons, the *Museum für*

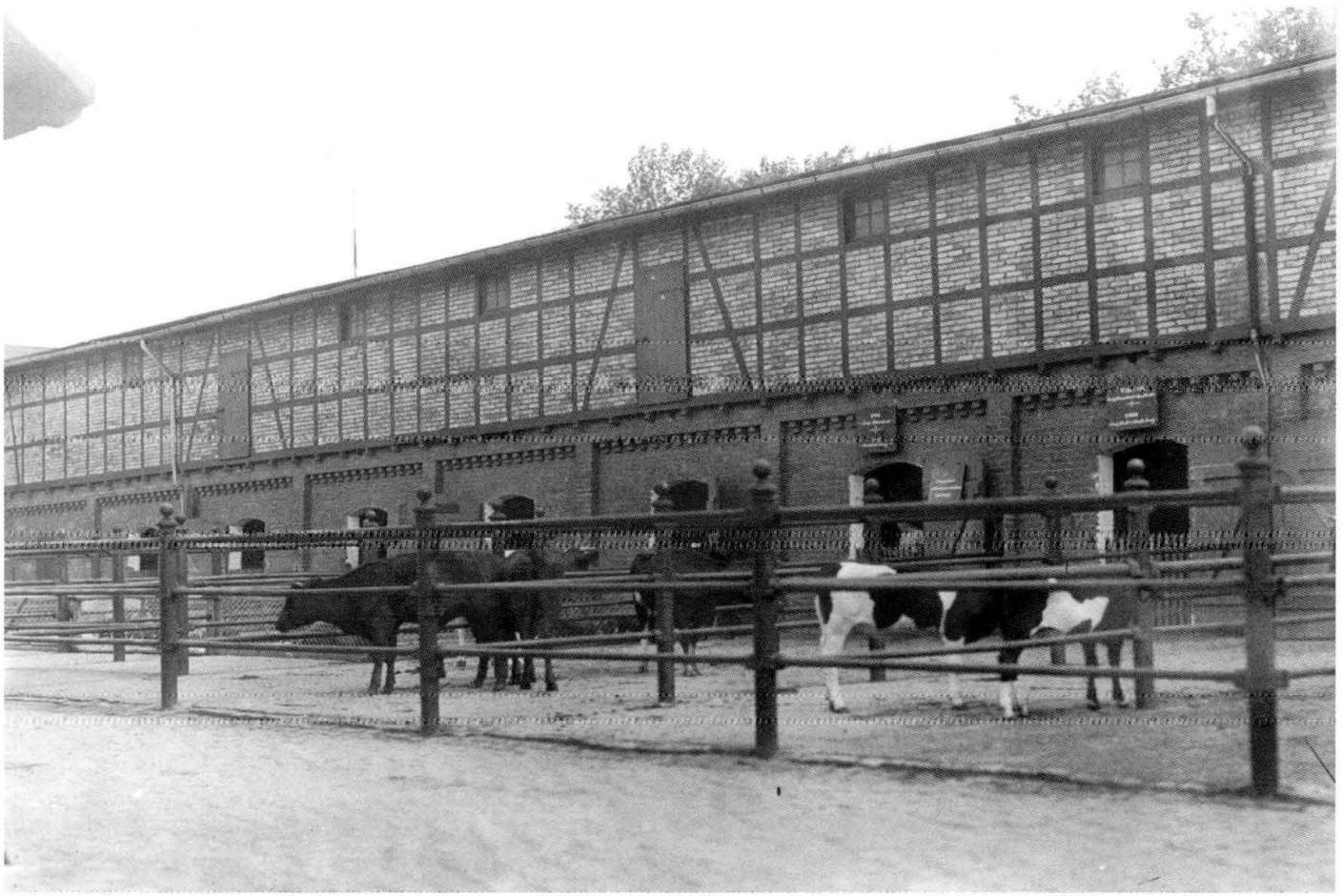

FIGURE 4

Institut für Tierzucht in Halle/Salle in 1930. In this building the *Julius Kühn Museum für Haustierkunde* and the osteological collection is housed today. Photo: Courtesy of the Julius-Kühn Museum, Halle.

Haustierkunde is visited regularly by specialists and archaeozoologists involved in osteological studies from Germany and abroad.

In the former *Museum für Ur- und Frühgeschichte Thüringens*, today the *Thüringisches Landesamt für Archäologische Denkmalpflege*, in Weimar (Figure 1: 10), research in archaeozoology was conducted by HANS-JOACHIM BARTHEL through the 1970s and 1980s. From 1953 onwards H.-J. Barthel was responsible for excavations and later acted as conservator. These activities led to his increasing interest in animal remains, and through his contact with M. Teichert, H.-J. Barthel learned the necessary methodology for handling and analysing such finds. At first largely a hobby, H.-J. Barthel's research now began to focus on serious archaeozoological questions, to which the Museum directed increasing financial support and research facilities throughout the years until his retirement in 1987. Hence, H.-J. Barthel was able to conduct a number of investigations of faunal assemblages from various periods (Neolithic to Medieval). These are documented, for example, in his publications on animal remains from Großobringen, a settlement of the Neolithic Bernburg culture, and osteological finds from the settlements Dienstedt and Haarhausen of the Roman Imperial period (Barthel, 1985, 1987).

His primary interests were directed towards economical aspects reflected in the archaeological context. The fact that H.-J. Barthel himself excavated almost all of the faunal complexes which he later examined, afforded him an excellent working base. His research on osteological finds from Thüringen as well as those of M. Teichert led the Museum to issue its own series of publications, "*Beiträge zur Archäozoologie*" within the "*Weimarer Monographien zur Ur- und Frühgeschichte*". Regretfully H.-J. Barthel's work was not continued after his retirement, so that today archaeozoology is no longer represented in the *Landesamt* Weimar.

The *Kreismuseum* (county museum) in the town Wolmirstedt, north of Magdeburg, has intermittently provided the opportunity to carry out archaeozoological investigations (Figure 1: 6). RALF-JÜRGEN PRILLOFF, educated in museology, was active there from 1972 to 1987. While pursuring a long-distance study-program in archaeology, in the mid-197-'s R.-J. Prilloff began the examination of animal remains from excavations in Mecklenburg-Vorpommern and Sachsen-Anhalt. In 1988 he moved to the *Kulturhistorische Museum* in Magdeburg, where he held a position as co-scientist. In 1991 he obtained a doctoral degree with his studies on animal remains from Medieval settlements in eastern Mecklenburg-Vorpommern (Prilloff, 1994). Since 1994 R.-J. Prilloff has worked independently and on a contract-basis for various institutions, analysing animal bone finds from the whoe of Germany area and concentrating on the Medieval period (Prilloff, 2000).

One of the non-university institutions in the former German Democratic Republic in which archaeozoological studies were carried out was the former *Zentralinstitut für Alte Geschichte und Archäologie* (Central Institute of Ancient History and Archaeology) within the *Akademie der Wissenschaften* (Academy of Sciences) in East Berlin (Figure 1: 3). Here H.-H. MÜLLER resumed his activities and studies after leaving Halle in 1960. He was involved above all in analysing animal remains from the Institute's current excavations as well as in joint projects with other archaeological conservation offices. A great number of his studies were concerned with the history of husbandry and hunting among the Slavic tribes settled between the Elbe and Oder rivers. The results were published in several editions and in a new edition of the well-known handbook "*Die Slawen in Deutschland*" (Herrmann, 1985). H.-H. Müller also presented the first comprehensive coverage of domestic animals in the Migration period (Müller, 1980). His was particularly interested in the horse, and the systematic investigation of skeletal horse remains from Sachsen-Anhalt, Thüringen. Together with Cyril Ambros (Nitra, Slovakia) he published this work in two monographs (Ambros & Müller, 1980; Müller, 1985). During his later years of career, H.-H. Müller expanded his studies to material from the Frankish-German region. His "*Bibliographie zur Archäo-Zoologie und Geschichte der Haustiere*", published annually between 1961 and 1996, is widely renowned (Müller, 1961-1996).

In 1979 the *Zentralinstitut für Alte Geschichte und Archäologie* was able to create two positions for archaeozoologists. At this time NORBERT BENECKE began his work under the guidance of H.-H. Müller, after completing his studies in biology at the University in Halle. N. Benecke's first comprehensive undertakings dealt with the documentation and analysis of animal remains from the early Medieval settlement in Ralswiek, a study with which he attained the doctoral degree in 1984 in Berlin. In the course of time numerous archaeozoological projects connected with the Institute's activities and the archaeological conservation offices in East Germany followed (Benecke, 1988). In this position and through exchange programs between the various Academies, N. Benecke undertook several scientific journeys to Poland, Bohemia, Hungary, Russia, the Ukraine and Slovakia from 1984 to 1989. The results of these investigations were presented in his habilitation, defended at the Martin-Luther University in Halle-Wittenberg, in 1992 (Benecke, 1994a). In the same year N. Benecke published his since much acclaimed and often cited book "*Der Mensch und seine Haustiere. Eine jahrtausendealte Beziehung*" (Benecke, 1994b).

After the dissolution of the *Zentralinstitut* as a consequence of reunification, H.-H. Müller took a position, until his retirement in 1996, at the *Institut für Prähistorische Archäologie* at the Free University in Berlin, through the efforts of Prof. B. Hänsel and supported by the *Wissenschaftler-Integrationsprogramm* (Program for the Integration of Scientists). N. Benecke on the other hand transferred in 1992 to the newly created *Arbeitsbereich Ur-und Frühgeschichte* (Department of Prehistory and Early History), restructured in 1995 into the *Eurasien-Abteilung* (Eurasia Department) of the DAI (Figure 1: 4). Since then he has been engaged in archaeozoological studies in various projects of the DAI as well as other German and foreign partners. Focal points of study include Central Europe, the Black Sea area (Crimea and Thrace), West Siberia and Middle Asia (Kazakhstan). Among his larger projects in recent years are "*Archäozoologische Studien zur Romanisierung im Gebiet der rechtsrheinischen Mittelgebirgszone*" (part of a major project of the DAI from 1995–1999; cf. Benecke, 2000); "*Die Entwicklung der europäischen Tierwelt vom Spätpleistozän bis zum Mittelalter*" (joint project with A. von den Driesch and D. Heinrich, 1994–1999, funded by the DFG; cf. Benecke, 1999a, 1999b); "*Einflüsse von Kulturbe-*

ziehungen auf die Nutzung der Tierwelt durch den Menschen an der Nahtstelle zwischen Europa und Asien, am Beispiel der Siedlungsräume Drama und Kirklareli" (a joint project with the Universities of Saarbrücken and Istanbul, 1994 until present; cf. Benecke, 1998); "*Tierhaltung und Jagd bei den bronze- und eisenzeitlichen Bevölkerungen im Talgar-Gebiet und im Hochland von Turgen/Tienschan*" (a joint project with Sweet Briar College/Virginia, and the Archaeological Institute in Almaty, 1998-). Since 1992 N. Benecke has lectured as a professor at the University in Halle, at both the *Zoologisches Institut* and the *Institut für Prähistorische Archäologie,* covering the fields of archaeozoology and the history of domestic animals. The course of study in prehistoric archaeology in Halle requires that students attain certifications of achievement in the subjects of archaeozoology or anthropology.

OVERVIEW OF THE DEVELOPMENT OF ARCHAEOZOOLOGY PRIOR TO REUNIFICATION

Upon review of the above, it becomes apparent that:

1. The development of archaeozoology in Germany was marked in its beginnings by a few outstanding individuals. After World War II scientists like M. Teichert, W. Herre and J. Boessneck laid the foundations for archaeozoological research in both Germanys, in the large museum of Halle and in the universities of Kiel and Munich, respectively. From these centres strong impulses radiated to other cities and institutions. At that time the special study of archaeozoology had a much closer affiliation with the larger field of biology than today.

2. Many of the fundamental principles and methodology in archaeozoology, today used internationally, had already developed during the first decades after World War II, equally in both East and West Germany. This includes the areas of domestication, the origin of wild ancestors, the identification of species from bone residue, nomenclature, age, sex, biometry and ethology. That these early developments in German archaeozoology have had so little international recognition may be due to the fact that most of these publications were written in German, and have not been translated into in English nor are many of them commonly available in libraries outside Germany. This is all the more unfortunate, since the principles and methodologies contained in them continue to be central to the field.

3. Methodologies employed, and the research goals of archaeozoologists in the East and West followed a similar course in divided Germany, although one major difference was the rather limited possibility for travelling in the East. Thus, archaeozoologists in the former German Democratic Republic directed their attention primarily to local faunal material, while occasionally having the opportunity to work abroad in other Socialist countries. In contrast, archaeozoologists in the Federal Republic of Germany were confronted with finds from wide regions of the world from the beginning.

4. In both East and West Germany, contact between archaeozoology and archaeology was rather strong in some cases, in others hardly existent. In retrospect, it must be noted that, during this period, although large amounts of animal bone had already been excavated and given to archaeozoological institutions for analysis, the integration of archaeology and archaeozoology was the exception rather than the rule. Analyses of animal bone remains most often published as completely separate studies, or, if in archaeological reports, in the form of appendices without reference, context or interpretation in the body of the archaeological text. Productive cross-references and exchange of information were rare exceptions.

5. Between 1960 and 1970 two important institutions were established: the *Institut für Paläoanatomie, Domestikationsforschung und Geschichte der Tiermedizin* in Munich and the *Archäologisch-Zoologische Arbeitsgruppe* in Schleswig.

6. The ensuing years can be regarded as the blossoming period of archaeozoology in Germany. In both the East and West, at universities as well as in the monument protection departments, numerous positions were created and existing archaeozoological institutions were expanded. An osteological laboratory was opened in Tübingen. Thereby, the affiliation of archaeozoological research with the biological sciences gradually lessened and it's distinct place within archaeology grew, as did stronger international ties.

7. It must be stressed that over the years, scientific contact worked well between colleagues in

East and West, despite the political border and bureaucratic hindrances. This network of communication and intellectual exchange was especially maintained and promoted by conferences. The study group *Arbeitsgruppe Archäozoologie*, created within the *Biologische Gesellschaft* (Biology Society) in East Germany was focussed on inviting colleagues from the West. Beginning in 1982 there were regular meetings: in Wolmirstedt in 1982, Halle in 1983, East Berlin in 1984, Schwerin in 1985, Weimar in 1987, Halle in 1989, and finally in the reunited Berlin in 1991. Likewise, there were archaeozoological symposia in the West, which colleagues from the East were able to attend with an official invitation. These included the Kiel Symposium (Kiel, 1962), the Munich Symposium in 1967 and the international symposium on "*Domestikationsforschung und Geschichte der Haustiere*" in 1971 in Budapest/Hungary. On that occasion the International Council of Archaeozoology was founded (Matolcsi, 1973).

DEVELOPMENTS SINCE 1990

Following the reunification of East and West Germany in 1990 joint projects were continued; some colleagues changed their place of work within Germany; the German Archaeological Institute (DAI) in Berlin established the Department of Archaeozoology. The number of projects in Germany as well as the activities of German archaeozoologists abroad, in the Near East and North Africa increased; and collaborative work among archaeozoologists and with anthropologists and archaeobotanists intensified. These developments are illustrated by the 1993 conference in Konstanz, which led to the establishment of the *Gesellschaft für Archäozoologie und Prähistorische Anthropologie* in 1994, and ensuing conferences in the Saalburg (1996), Braunschweig (1998) and Halle (2000; Kokabi & Wahl, 1994, 1997; Kokabi & May, 1999). Since 1995 a joint project on the history of Holocene fauna in Europe has been conducted by the DAI in Berlin, the *Institut für Haustierkunde* in Kiel and the *Institut für Palaeoanatomie und Geschichte der Tiermedizin* in Munich. Subsequently, the results of archaeozoological analyses from all European countries have been collected in a database and made accessible for use (Benecke, 1999a). For Germany alone, this catalogue lists more than 1,100 sites at which archaeozoological researched was conducted.

At this time archaeozoology in Germany is developing towards greater independence. The range of methods and techniques applied in research has changed and broadened (e.g. trace element- and staple isotope analyses, retrieval of DNA from ancient animal tissues). Furthermore, efforts tend increasingly towards viewing archaeozoological data no longer in isolation, but in close context with all other archaeological data and, importantly, with a more critical assessment of the source faunal materials. Independent of the chronological information provided by standard archaeological methods (primarily sherds typologies, architecture or the like), direct C14-dating of bone now aids our understanding of the processes involved in the development of domestic animals and environmental history. Research involving the direct dating of faunal material are currently being carried out in Berlin, Tübingen and Köln. Long term involvement in field excavations, and direct influence on excavation techniques and the documentation of data on site have become routine for German archaeozoologists.

Yet, these efforts to use archaeozoology in answering questions concerning life in prehistoric and historic times by all means at disposal have met with several obstacles in the past eleven years.

1. The aforementioned restructuring of research in Germany following reunification has had widely felt consequences, above all drastic reductions in financial support. For example, after reunification, universities in Berlin lost about one-third of their scientific staffing. Insufficient financial support for field and research projects is but one of many consequences, that has affected archaeology, and archaeozoology in particular.

2. Moreover, it is not the general political development alone that exerts a negative effect on the future of archaeozoological research in Germany. It seems to us, the authors, that – with few exceptions – the efforts of archaeozoologists do not find earnest acceptance and integration in German archaeology, in contrast to the situation in other European countries. Even today many German archaeologists do not consider animal bone remains of equal value to other archaeological materials. Archaeozoology is little debated and is often designated as "*Hilfswissenschaft*" (an auxiliary subject). It seems symptomatic that a new German manual on archaeological methods, enti-

tled "*Prähistorische Archäologie. Konzepte und Methoden*" does not make a single reference to archaeozoology (Eggert, 2001). The absence of archaeozoology in this volume may reflect the continuing predominance in German archaeology of traditional theory and methodology although critical voices do exist (cf. Bernbeck 1997, 15ff; Schauer, 1999).

3. In recent years, the interest of archaeologists in archaeozoology seems to have decreased to the extent that new teaching and research positions have not been created and several existing positions have either not been refilled upon the occupant's retirement or have been dissolved entirely.

4. In addition, there is a lack of integration of archaeozoology into Germany's educational system, which intensifies this negative intellectual and scholarly environment. With the exception of the universities in Kiel, Tübingen and Munich, the faculties of the humanities and sciences have a relatively static, traditionally shaped organisation. Both faculties maintain strictly separate programs of study, which vary greatly in content. This includes the prerequisites (e.g. *Numerus clausus*), or mandatory courses and notes, and the requirements for and type of final degree (in archaeology: a master's degree, in the natural sciences: a diploma). In our view, this programmatic divorce is obsolete and unfortunate for the future of archaeozoology. As the programs are now configured, zoology, biology and veterinary medicine have their place in the school of sciences, while archaeology is grouped within the humanities. Cross-courses and programs are not offered, and thus it is difficult if not impossible to pursue a combined or interdisciplinary degree[6].

Nevertheless, each year a substantial number of archaeozoological theses are produced by ambitious young scientists in the few archaeozoological institutions. How and where these graduates will find future work in archaeozoology is uncertain, especially since the number of positions available in Germany is quite small. At present seven archaeozoologists are employed at German universities, only three of these with a permanent position. Another seven archaeozoologists work in institutions outside the universities, such as the DAI and *Landesdenkmalamt,* or in museums. However, only five have long-term positions. In view of this situation, it is no wonder that many archaeozoological colleagues have felt compelled to shift to free-lance work, which is also problematic in Germany, or have moved to other countries such as Switzerland. The climate of optimism that dominated the 1980s has vanished. Facit: at this point and with few exceptions, there is no foreseeably positive future for archaeozoology in Germany.

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[6] If a student wishes to enrol in both subjects, he/she must take on a "double major" which entails a longer time of study and financial burden.

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