

Current studies indicate that hunting-gathering groups may get all of the food they need without working too hard. Early agriculture suffered from the vicissitudes of the weather and it was not until about 5000 BC that the use of irrigation, a truly revolutionary change, made it possible to grow pure stands of cereal grasses where none had grown before. The domestication of animals may have been primarily a device for the live storage of surplus foodstuffs.

Smith, an Egyptologist, describes in detail some of the notable portrayals of animals in sculpture, relief, and painting in dynastic Egypt. Especially intriguing are the illustrations showing the forcible feeding of cranes and of an animal identified as a hyena. Reed, in a thoughtful article, suggests that the bovids might have been preadapted to domestication because of their ability to survive on a diet high in cellulose and low in protein and to convert otherwise useless materials into carbohydrates, proteins, and fats by way of milk and flesh and other valuable commodities, hides, hair, and wool and, in time, dung for fuel and for fertilizer.

From his studies on the history and ethnography of three West Indian starches—manioc, arrowroot, and zamia—Sturtevant concludes that historical documents, when available, may be more reliable than modern ethnographic data in interpreting archaeological evidence. Writing on the origin, variability, and spread of the groundnut, Krapovickas concludes that the cultivated form probably originated in Bolivia at the base or in the foothills of the Andes. It reached the Peruvian coast at an early date and after the discovery of America spread rapidly to various parts of the Old World.

In a short but well documented and illustrated article, Drower discusses the domestication of the horse which seems to have begun not much earlier than 2000 BC. The first tamers may have been nomadic herdsmen to whom rapid mobility would have given many advantages. By 1000 BC newer and larger breeds of horses were making their appearance and superior harness had evolved. Examining the evidence from skeletons and ancient faeces, Brothwell states that the latter had begun to give precise information on the wide range of foodstuffs consumed by individuals of different cultures and concludes that the breadth of potential information in the study of coprolites is enormous.

To one who has participated in the interdisciplinary research on the evolution of agriculture in the New World, it is somewhat disappointing to see so little attention given to the subject in this seminar. The contributions of MacNeish and his associates are mentioned only in passing, although they represent a notable example of the collaboration that Grimes prescribes in his part of the introduction. Another disappointment in reading this work is that the seminar, whose proceedings it reports and which was held in 1968, took no cognizance whatever of the fact that 1968 was the centennial of the publication of Darwin's famous *The Variation of Animals and Plants under Domestication*. The present generation seems sometimes unaware of its debt to the illustrious past.

PAUL C. MANGELSDORF

## ORIGINS OF TODAY'S CUISINE

### Food in Antiquity

By Don and Patricia Brothwell. (Ancient Peoples and Places.) Pp. 248. (67 plates.) (Thames and Hudson: London, June 1969.) 42s.

FOOD is an agreeable subject to us all, and in this agreeable book Dr and Mrs Brothwell remind us that our ancestors, especially the Romans, were more adventurous and more ingenious in its preparation than ourselves. Fig. 16, for instance, illustrates a special container with holes and internal ridges, used by the Romans for fattening dormice.

Of course much has already been written on the subject of food in classical times, using historical sources. For instance, Jacques André in his *La Cuisine et l'Alimentation à Rome* gives a vivid picture of Roman diet, using these sources, on which the Brothwells also draw.

In recent years the archaeologist has rightly come to regard the food quest as the prime activity of most human societies, and a rapidly increasing body of information on early subsistence is available from the study of excavated plant and animal remains, of coprolites (preserved human faeces), and the examination of human bones. The Brothwells have courageously attempted a summary of this colossal field, from prehistoric times to the classical world, using both the preserved written records and the findings of the archaeologist. In the space of a short text, only an introduction to the subject is possible. But they have made it a lively, up to date and well illustrated one, with a good bibliography.

The bulk of the text is taken up with a systematic survey of the different kinds of food resource (vertebrates, invertebrates, sugars, fungi, cereal crops, and the like). The sections dealing with molluscs and honey are particularly good, as is the discussion of fungi. But it is impossible to say anything that is new about wheat, for instance, in the space of one and a half pages, or about rice, or about sheep and goats within two pages. Consequently, there is little for the specialist in this principal and encyclopaedic section.

In their introduction, however, and in the concluding chapter, "Diet and Disease", the authors impose their own perspective on this complicated picture, with pertinent comments on infant feeding in antiquity and on vitamin deficiencies. Several books remain to be written here, which the Brothwells would be well qualified to produce.

Meanwhile they have produced an agreeable introduction to this vast field, with well selected illustrations, which can be read with enjoyment by all interested in man's past or in the early origins of today's cuisine.

COLIN RENFREW

## Obituaries

### Academician V. A. Kargin

VALENTIN ALEKSEEVICH KARGIN, who died on October 21, aged sixty-three, was a colloid and polymer chemist with a high reputation all over the world. He was born on January 23, 1907, in Dnepropetrovsk, and began his active scientific career at the age of fifteen, publishing several papers on analytical chemistry and electrochemistry by the time he was twenty. From then until he was about thirty Kargin was concerned chiefly with the physical chemistry of colloidal systems. It is now said to be difficult to imagine any aspect of the physical chemistry of high molecular compounds with which he was not associated.

Kargin began work as a laboratory assistant in the L. P. Karpov Physical Chemistry Institute in Moscow in 1924, and was to stay there for forty-five years. Early in his career he also studied at Moscow State University, finishing in 1930. Six years later he was given his doctorate for work on colloid chemistry, without the formality of a thesis. Other awards and distinctions for his scientific and social contributions followed.

In 1956 he founded the Department of High Molecular Compounds at Moscow State University, the first of its kind in the Soviet Union. He directed this department until the end of his life, as well as running the colloidal chemistry laboratory of the Karpov Institute, which he took over in 1937. During part of his career Kargin also directed polymer research at the A. V. Topchiev Institute of Petrochemical Synthesis.