that cause distinct off-flavours in milk even when they are present only in minute traces. By means of mass spectrometry and infra-red spectroscopy it has now been possible to identify the substance which sometimes causes a metallic flavour in milk as being vinyl *n*-amyl ketone. The flavour of this substance can be detected when it is present to the extent of only one part in 10^{10} parts of water. The annual report for 1962 ends with a list of twenty-five publications issued by the Division during the year.

Scarab Beetles

SCARAB beetles of the genus *Onthophagus* is the subject of a paper published as the *Proceedings of the U.S. National Museum, Smithsonian Institution* (114, No. 3467: *Scarab Beetles of the Genus* Onthophagus *Latreille North of Mexico* (*Coleoptera : Scarabaeidae*). Pp. 1–135 + 9 plates. Washington, D.C.: Government Printing Office, 1963). The paper is by Messrs. H. F. Howden and O. L. Cartwright and the main purpose of their work was to facilitate the identification of the species of *Onthophagus* in the United States and Canada and to include information on habits and life-histories. Twenty-three species and subspecies are described from North America, two species introduced from Europe and Africa and eleven previously unrecognized species are also included. A key to the species, bibliographical references, complete new descriptions, photographs of both sexes and distribution maps are given.

Middle Palæolithic Industry in Greece

PALÆOLITHIC industries in eastern Europe are not too common and the discovery of a number of sites in Macedonia and western Greece is of particular interest. An expedition from the Department of Archæology and Anthropology at Cambridge visited the region with the view of relating environmental and climate changes to Stone Age finds. A report of this expedition occurs in the January issue of *Man*. Between Joannina and Prevesa, near the village of Pantanassa, in a deposit not far from the Louros River, a number of Middle Stone Age sites were discovered. There appears to be quite a local stratigraphy and the tools—very deeply patinated—are not just surface finds. From a typological point of view, the industry could certainly be classed as late Levallois. Typical points on flakes with striking platforms occur, as well as cores. One or two tools, which, had they been found in Somaliland or South Africa, would have been called 'Still Bay points', can also be noted. Many prehistorians by and large accept the idea of the existence of three main 'provinces' in Early Stone Age times. That characterized by core tools covers much of western Europe, Africa and southern India; another can be located in regions from the Rhine to China, and here the industries are for the most part made on flakes (the new finds in Greece fall in with this classification). The last province is situated from northern India through Burma to south-east Asia, and is characterized by the presence for the most part of pebble tools. Naturally there is nothing rigid about this triple subdivision. E. S. Higgs and his party are to be congratulated on making an important discovery and filling in a gap in our knowledge.

Hydration of Tricalcium Aluminate with Lignosulphonates

IT is well known in the field of concrete research that certain salts of lignosulphonic acid, produced from waste liquors obtained from the wood-pulping industry, are surface-active agents with the properties of lowering the water requirement and retarding the setting time of a concrete mix. Apart from this, such additives are beneficial to concrete in other important directions, for example, increase in mechanical strength, but such increase has been found to be too large to be ascribed solely to lowering the water/cement ratio. It is believed that such added strength may be the result of changes in hydration products, with corresponding changes in structure in the set cement. Normally, hydration of tricalcium aluminate produces hexagonal crystals of a platy type, easily identified with the aid of the electron microscope. In the presence of lignosulphonate, however, acicular crystals tend to form instead of hexagonal plates. Such a marked change could be due to formation of different hydration products or to some modification of crystal habit of the usual hydrates determined by the presence of lignosulphonates in the water. These new acicular crystals posed a problem of their nature and significance, and their investigation has recently been undertaken by J. F. Young in the Department of Scientific and Industrial Research Laboratory (Dominion), New Zealand. His conclusions are set forth in a paper published in *Concrete Research* (14, 137; November 1962). By utilizing X-ray diffraction, differential thermal analysis, electron and optical microscopic procedures, Mr. Young shows that these acicular crystal forms can represent more than one hydration product, differences being attributed to small changes in hydration conditions. They can be the result of either crystallization of an unusual hydrate (C_3AH_{21}) or the morphological modification of the hydrates C_2AH_8 and C_4AH_{13}. In pastes of tricalcium aluminate, lignosulphonates favour formation of C_2AH_8 and C_4AH_{13} with modified crystal habit. The final hydration products, low sulpho-aluminates, are changed from their more normal hexagonal plate form. It is argued that the interlocking tendency of acicular crystals would be expected to produce an increase in strength in pastes where the normal hexagonal crystal-growths are thus replaced. The results are of value in explaining the effects of lignosulphonate additives on cement pastes or concrete.

Continental Drift

THE close fit of the coastlines of South America and Africa was one of the original facts which led A. Wegener to suggest his theory of continental drift. Dr. H. Martin, in his du Toit Memorial Lectures of the Geological Society of South Africa, considers again the evidence for the geological similarities of these continents, a matter about which Wegener wrote but on which much new field evidence is now available (The Geological Society of South Africa. Alex. L. Du Toit Memorial Lectures No. 7: The Hypothesis of Continental Drift in the Light of Recent Advances of Geological Knowledge in Brazil and in South West Africa. Annexure to Vol. 64 of the *Transactions and Proceedings of the Geological Society of South Africa*. By H. Martin. Pp. 48 + 5 plates. Johannesburg: The Geological Society of South Africa; The South African Association for the Advancement of Science; The South African Geographical Society; Rondebosch: The Royal Society of South Africa).

The Beilby Medal and Prize

THE Administrators of the Sir George Beilby Memorial Fund, representing the Royal Institute of Chemistry, the Society of Chemical Industry and the Institute of Metals, have announced awards from the Fund in 1963—each consisting of the recently instituted gold medal with a prize of 100 guineas—to the following: Prof. R. W. K. Honeycombe, professor of physical metallurgy at the University of Sheffield, in recognition of his work in physical metallurgy, with special reference to the study of precipitation processes and the modes of plastic deformation of metals and alloys; Dr. R. W. B. Nurse, head of the Materials Division of the Department of Scientific and Industrial Research Building Research Station, in recognition of his work on the chemistry and technology of cement, with special reference to the study of the fundamental chemistry of cement and its applica-