

A sample from the Upper Esna Shale member of Landenian age has been examined in the electron microscope for its contents of calcareous nannoplankton. Electron-micrographs were correlated with photomicrographs of the same species. Two new species of fossil coccoliths are proposed.

### **Palynological Investigation of three Loess Deposits in the Vienna Basin (Austria)**

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Palynological study of Ebersbrunn, Hollabrunn and Stillfried loess deposits of Vienna Basin was carried out in the UNESCO Postgraduate Programme under the guidance of Prof. W. KLAUS with the idea to apply the knowledge and experience thus gained, on similar sediments of food producing areas of Pakistan.

Pollen extraction from loess presented some difficulty. First a special technique was used and then the standard technique was applied with slight modification.

Some humified layers of these loess deposits contain a few pollen and spores. Ebersbrunn and Hollabrunn loess in general have the same microflora. Among the grains found, Pinus and Compositae dominate over others.

Pollen and spores in the loess seem a mixture of local and transported grains, and they all are resistant ones.

### **Heavy Mineral Contents of Burdigalian and Helvetian Sediments of the Molasse Basin**

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The mineral content of Helvetian and Burdigalian clayey sandstones and shales from different core samples of the Molasse Basin, Lower Austria, was investigated in order to give a characteristic petrographical profile of the area. Examination showed a total of 20 heavy minerals of detrital origin, the most common of them being chlorite, chloritoid, clinozoicite, epidote, garnet (by far the most abundant), almenite, magnetite, rutile and tourmaline. The light minerals are composed of large quantities of quartz and, in minor proportion, of different types of feldspars (acidic to intermediate plagioclase, microcline, orthoclase), and variable amounts of muscovite and calcite.

The shale units do not contain more than 4% of the heavies whereas the most sandy formations contain between 6 and 7.5%.

The tabulated frequencies of the heavy minerals show appreciable variations through the stratigraphical units. These variations, following an undulatory pattern, are evident when the minerals are tabulated as belonging to four main groups which are: 1) garnet, 2) more stable minerals (rutile, sphene, tourmaline, zircon), 3) alpine metamorphic minerals (chloritoid, clinozoicite, epidote, green hornblende), and 4) opaque minerals. The reasons for these variations are considered to be: 1) relative changes in the weathering rates in the different source areas, 2) sorting during transportation, and 3) post-depositional alteration.

The main source area of these sediments appears to be the southern outcropping alpine metamorphics and some of the sedimentary units which intercalated them. But a minor contribution was probably also made by the northern igneous and metamorphic rocks of the Bohemian Massif. Finally, the underlying Tertiary and Mesozoic sedimentary rocks might have also contributed to the sedimentary content of the basin.