

Olriki, *Onoclea sensibilis* and species of *Fagus*, *Platanus*, *Salix*. Dawson refers the former to the Laramie, and the latter to the Eocene (1888). Spitzbergen, in lat. 78° 56', has yielded many species, including two species of *Taxodium*, and species of Hazel, Poplar, Alder, Beech, Plane Tree and Lime. But it is now questioned whether part of the Miocene of Greenland is not Eocene.

Out of 180 species from the Eocene beds of Haring, 55, according to Ettingshausen, are Australian in type, 28 East Indian, 23 tropical American, 14 South African, 8 Pacific, 7 North American and Mexican, 6 West Indian, 5 South European. The resemblance to Australia consists not merely in the number of related species, but in their character, — the small, oblong, leathery-leaved *Proteaceæ* and *Myrtaceæ*, the delicately branching *Casuarinæ*, the Cypress-like species of *Frenela* and *Callitris*, etc. Only 11 species have their representatives in warm temperate climates.

In the Miocene of Vienna, nearly a third are North American in type; but with these there are some South American, East Indian, Australian, central Asiatic, and not a sixth European. The species particularly related to those of North America (its warmer portion) belong to the genera *Fagus*, *Quercus*, *Liquidambar*, *Laurus*, *Bumelia*, *Diospyros*, and *Andromedites*.

ANIMALS. — No fossil Invertebrate or Vertebrate of the Cretaceous of Great Britain is known from the Tertiary; and this is true also for Europe.

Invertebrates. — The shells of Rhizopods, *Foraminifers*, were as important in rock-making during the Eocene Tertiary as during the Cretaceous. The species of greatest interest are the coin-shaped *Nummulites* which contributed largely to the constitution of Eocene strata, as already stated. A common species is here represented, with the exterior of half of it removed, so as to show the spiral ranges of cells that were formed by the successive budding of Rhizopods. There are but few Brachiopods known, and these are mostly of the groups of *Lingulids*,

1545.



Nummulites nummularius.

Discinids, *Terebratulids* and *Rhynchonellids*.

The Mollusks were nearly all of modern genera. Some of the common Eocene Gastropods are species of *Oliva*, *Fusus*, *Voluta*, *Fasciolaria*, *Conus*, *Mitra*, *Cerithium*, *Turritella*, *Rostellaria*, *Pleurotoma*, *Cypræa*, *Natica*, *Scalaria*. England had six species of Eocene Nautilus.

Insects, and also Arachnids and Myriapods, have been obtained in great numbers from the amber in the Lignitic portions of the Lower Oligocene of northern Germany, near Königsberg. Over 2000 species have been collected from it. They were caught in the resin while it was in its original liquid state, and the most delicate parts are preserved in perfection. The lignite was made chiefly from Conifers, and the common species is a Pinus, *P. succinifer*. They show that forests of Conifers were a common feature of northern Europe. Insects occur also abundantly in the Middle Tertiary of Oeningen, Radoboj, Parschlug, Auvergne, and in the Rhenish Brown coal.

Vertebrates. — Among *Fishes*, *Teleosts*, or common Fishes, which began in the Cretaceous, were profusely represented. Ganoids were relatively few;