

in the Alpine regions of France and Italy and at Ternal in Spain. The coals of Bornholm, Denmark, are of Rhætic or Liassic age.

Lower Jurassic coals occur in Sweden, Servia and Hungary; Middle Jurassic coals in the Kutais district of the Caucasus, and Upper Jurassic coals in Suchum (Caucasus), Portugal and Norway (Andö island).

Borings in New Russia and Lithuania have penetrated seams supposed to be of Jurassic age and important Jurassic deposits occur on Spitzbergen island and in the Grestener series in Austria.

Cretaceous coal-measures are found in the southern part of Europe. Coal is being mined in large areas in Servia and in the Balkan basin of Bulgaria, where many seams of friable coal are found. In the Lower Cretaceous of Spain, coal is found in Alva and on the Balearic islands and lignite in Saragossa and Barcelona. Upper Cretaceous measures in the Rhone valley (France) contain an important reserve. Those of Servia contain more coal than the older rocks and in Austria the Gosau layers are mined near Salzburg. In Spain the rocks of this division contain lignite in the province of Alva.

#### TERTIARY COALS

A large proportion of the brown-coal of Europe is found in beds of Tertiary age, the principal fields being those of Germany, Austria and southern Russia.

Eocene beds contain the principal brown-coal reserves of the Saxony-Thurgia districts of Germany as well as the reserves on the Main and near Cassel. In Austria the Eocene coals are found in many localities in Dalmatia and Istria and in Hungary they include the coals of Talabánya and Nitrabánya. In southern Russia the coals of Kiev and Buchak are probably Eocene. Other occurrences of coals at this horizon are found in Italy and Sardinia, and in small areas in Switzerland, in La Counette basin, France and on the Balearic islands, Spain.

Oligocene coal-bearing beds are found in the Austrian Tyrol, and in northern Bohemia, in the Stotzka strata of southern Austria and in Dalmatia. In the Poltava beds of Kiev, Russia, and in many small areas in Hungary coals of possibly Oligocene age occur. To these may also be added the beds of Lerida, Spain and of Kherson, New Russia.

Miocene coals form the principal reserve of Galicia and occur in Bohemia, and in the Mürtz and Mur fields west of Vienna, Austria. They are also the principal coals of Bosnia and Herzegovina and occur in Hungary and southern Russia, Switzerland and France. Many areas in Germany, among which are those near Cologne, Lusatia, Cassel, Westerwalds, Frankfurt on the Oder and Gorlitz, contain important brown-coal deposits. Italy and Sardinia also have Miocene coals and in the centre of Denmark a large unestimated reserve of lignite has been found. The Miocene coals of Spitzbergen are of great importance and are the only ones being mined on the island.

Pliocene lignites occur in Tuscany and Umbria, Italy. In southern Russia and Austria a division into Upper and Lower, i.e. Pontic and Sarmatic is made. The Sarmatic of the Caucasus contains an important reserve in the Olti district and the Pontic coal-bearing in New Russia and in Austria in the Schall valley.