of the bays in the harbour are largely visited on Sundays and holidays. The most popular resorts are Manly Beach, Chowder Bay and Watson’s Bay, in the harbour; Cabarita, on the Parra­matta river; Middle Harbour; and Coogee Bay and Bondi, on the ocean beach; Botany, Lady Robinson’s Beach, Sandringham and Sans Souci on Botany Bay. Besides these there are two splendid national reserves, an hour’s journey by rail from Sydney, viz. National Park, comprising an area of 36,810 acres, surrounding the picturesque bay of Port Hacking; and Kurringai Chase, with an area of 35,300 acres.

The two principal cemeteries are at Waverley and Rookwood. The former is most picturesquely situated on the cliff overlooking the Pacific Ocean.

The climate of Sydney is mild and equable; in summer sea breezes blow from the north-east, which, while they temper the heat, make the air exceedingly humid; in winter the winds blow from the west and the climate is dry and bracing. The mean average temperature is 63° Fahr., and the rainfall 49·66 in.

The population has increased with marvellous rapidity. In 1861 it was (city and suburbs inclusive) 95,000; in 1881, 237,300; in 1891, 399,270; and in 1901, 487,9oo. The proportion of city dwellers to suburban is as follows: in 1901—city, 112,137; suburbs, 369,693; total, 487,900. The incorporated area of the metropolitan district is about 142 sq. m., or 91,220 acres, so that the average density of population was 5∙35 persons per acre, some of the more immediate suburbs being more densely popu­lated than the city itself.

**SYDNEY, the** chief town of Cape Breton county, Nova Scotia, on a good harbour, the eastern terminus of the Intercolonial railway. Pop. (1891), 2427, (1901), 9900*.* Formerly a quiet country town, it became between 1891 and 1901 the chief shipping port of the Dominion Coal Company, and the site of the large works of the Dominion Iron and Steel Company. On the opposite side of the harbour are the flourishing towns of North Sydney and of Sydney Mines. It is the starting point for the line of steamers to the Bras d’Or lakes, and a favourite summer resort.

**SYENITE, a** name first used by Pliny to designate rocks of the same type as the hornblendic granite of Syene (Assouan) in Upper Egypt, so extensively used in ancient times for archi­tectural work and monuments. Transferred by Werner to a rock of much the same appearance, though not Identical in mineral­ogical character with the Egyptian granite, from the Plauen ’scher Grund near Dresden, it is now used as the group name of a class of holo-crystalline plutonic rocks composed essentially of an alkali felspar and a ferromagnesian mineral. the structure and appearance are very much the same as that of a hornblendic granite; from which it is difficult to distinguish these rocks in hand specimens. the important difference, however, is the absence or scarcity of quartz in the syenites. Their essential components are orthoclase, often with some albite, and augite, hornblende or biotite. The orthoclase is white or pink, and forms nearly one half of the rock. It may be veined with albite (microperthite) and small crystals of plagioclase (mostly andesine and oligoclase) often are present, usually having better crystal­line forms than the potash felspar. The prevalent hornblende is green, but brown hornblende and dark blue hornblende, of strong pleochroism, occur in some syenites which are rich in

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | SiO2. | A12O3, | Fe2O3. | FeO. | MgO. | CaO. | Na20. | K20. |
| I. Hornblende-syenite (Plauen ’scher Grund, Dresden) | 59·83 | 16∙85 | — | 7∙01 | 2∙61 | 4∙43 | 2∙44 | 6·57 |
| 11. laurvikite (Lanrvik, Norway) | 58∙88 | 20·30 | 3·63 | 2·58 | 0∙79 | 3·03 | 5∙73 | 4∙50 |
| III. Nordmarkite (Christiania) | 59·88 | 17∙87 | 2∙67 | 1·50 | 1∙04 | 2·01 | 7∙96 | 5·69 |

alkalis. The augite is usually pale green and may be in perthitic intergrowth with the hornblende. The mica is always of brown colour, as muscovite is not known to occur in these rocks. In the alkali syenites dark green soda augites may be present; other syenites contain a violet augite which has the lamella structure of diallage.

The accessory minerals include sphene (very frequent),

apatite, zircon, magnetite and pyrites; quartz as above stated is rarely absent but should never be abundant, otherwise the rock becomes a granite. Nepheline and sodalite occur only in those rocks which show transitions to the nepheline-syenites.

The structure of syenites is almost exactly the same as that of the granites; varieties with porphyritic felspar are known but none of these rocks are evenly granular. The apatite, zircon and magne­tite crystallize first, and occur as small well-shaped crystals enclosed in the other minerals. Sphene also is of early formation; then follow augite, biotite and hornblende, the pyroxene usually taking precedence, but regular intergrowths due to simultaneous crystalliza­tion of these three minerals are common. The plagioclase felspar succeeds the ferromagnesian minerals, and the alkali felspar is last to crystallize with the exception of the small amount of quartz and of micropegmatite, if these arc present. Exceptions to this rule occur, as for example when part of the soda-lime felspar has sepa­rated out of the magma before the ferric minerals have ceased to grow, and is consequently enclosed in them in ophitic fashion. Some syenites have a fluxion or even “ augen ” structure, due to movements during consolidation; orbicular structure may also occur but is very rare.

Although syenites are by no means common rocks and are not of equal importance with granites and diorites from a geological standpoint, they exhibit many varieties which are of interest. Transi­tional forms between syenite and granite are common as these rocks very frequently occur in the same mass and can hardly be separated from one another in the field. These syenites, comparatively rich in quartz, have been called syenite-granites. Many of the rocks known to the older geologists and shown on the early maps as “ syenite *” are* of this type; others are hornblendic granites in which quartz is not abundant or conspicuous. Another variety of quartz­syenite, very rich in pink alkali felspar (microperthite), is known as nordmarkite; it occurs in Norway, Sweden and Scotland, and con­tains usually only a small amount of brown biotite and green augite.

'Γhe more normal syenites (with only small percentages of quartz) may be divided into augite-, hornblende- and biotite-syenites, according to their prevalent ferric mineral, but usually the rock contains two or even three of the dark-coloured bisilicates. Augite­syenites occur in Saxony and in Norway. In the latter country the most abundant type is laurvikite. These rocks may be red or grey in colour and very largely consist of a perthitic or cryptoperthitic alkali felspar having a beautiful shimmering dull metallic reflection or play of colours. They are coarse-grained rocks, and their great freshness and iridescent appearance when polished make them favourite ornamental stones for facades and pillars. The large felspars have often an elongated elliptical form and are arranged in sub-parallel fashion apparently by fluxion movements. Quartz is usually absent and plagioclase is still more uncommon, but the occasional presence of nepheline and sodalite indicates that these rocks are connected with the nepheline-syenites of the laurvikite type. The ferromagnesian minerals show a great variety and include diopside, aegirine-augite, biotite, brown hornblende, hypersthene and olivine. Zircon is often abundant (zircon-syenite). Rocks very similar to the laurvikites of Norway are known in the Sawtooth Mountains of Texas. These augite-syenites which have plagioclase and orthoclase felspar in nearly equal quantity are called nonzonites. Hornblende-syenites are regarded as being the typical members of the group, hence the best-known syenite, the original rock which Werner described, is of this kind; they are not very common, but occur in Germany, Piedmont and other places, usually with hornblende-granites and diorites. Biotite­syenites also are not frequent, being usually accompanied by granites of which they represent modifications poor in quartz. Most of the rocks formerly known as mica-syenites are now grouped with the lamprophyres as minettes. The following analyses show the chemical composition of a few of the principal types of syenite. They are characterized by a moderate amount of silica, relatively high alkalis (with potash usually preponderating) and alumina, while lime and magnesia are more variable but never in great amount.

(J. S. F.)

**SYLBURG, FRIEDRICH** (1536-1596), German classical scholar, son of a farmer, was born at Wetter near Marburg. He studied at Marburg, Jena, Geneva, and, lastly, Paris, where his teacher was Henry Estienne (Stephanus), to whose great Greek *Thesaurus* Sylburg afterwards made important contribu­tions. Returning to Germany, he held educational posts at Neu­haus near Worms and at Lich near Giessen, where he edited a