in some Italian trachytes. Dark brown varieties of augite and rhombic pyroxene (hypersthene or bronzite) have been observed but are not common. Apatite, zircon and magnetite are prac- tically always present as unimportant accessory minerals.

The trachytes being very rich in potash felspar, necessarily contain considerable amounts of alkalis; in this character they approach the phonolites. Occasionally minerals of the fels- pathoid group, such as nepheline, sodalite and leucite, occur, and rocks of this kind are known as phonolitic trachytes. The soda-bearing amphiboles and pyroxenes so characteristic of the phonolites may also be found in some trachytes; thus aegirine or aegironic augite forms outgrowths on diopside crystals, and riebeckite may be present in spongy growths among the felspars of the groundmass (as in the trachyte of Berkum on the Rhine). Trachytic rocks are typically porphyritic, and some of the best- known examples, such as the trachyte of Drachenfels on the Rhine, show this character excellently, having large sanidine crystals of tabular form an inch or two in length scattered through their fine-grained groundmass. In many trachytes, however, the phenocrysts are few and small, and the ground- mass comparatively coarse. The ferromagnesian minerals rarely occur in large crystals, and are usually not conspicuous in hand specimens of these rocks. Two types of ground- mass are generally recognized: the trachytic, composed mainly of long, narrow, sub-parallel rods of sanidine, and the orthophyric, consisting of small, squarish or rectan­gular prisms of the same mineral. Sometimes granular augite or spongy riebeckite occurs in the groundmass, but as a rule this part of the rock is highly felspathic. Glassy forms of trachyte (obsidians) occur, as in Iceland, and pumiceous varieties are known (in Teneriffe and elsewhere), but these rocks as contrasted with the rhyolites have a remark­ably strong tendency to crystallize, and are rarely to any considerable extent vitreous.

Trachytes are well represented among the Tertiary and Recent volcanic rocks of Europe. ln Britain they occur in Skye as lava flows and as dikes or intrusions, but they are much more common on the continent of Europe, as in the Rhine district and the Eifel, also in Auvergne, Bohemia and the Euganean Hills. In the neigh- bourhood of Rome, Naples and the island of Ischia trachytic lavas and tuffs are of common occurrence. In America trachytes are less frequent, being known in S. Dakota (Black Hills). In Iceland, the Azores, Teneriffe and Ascension there are Recent trachytic lavas, and rocks of this kind occur also in New South Wales (Cambewarra range), East Africa, Madagascar, Aden and in many other districts.

Among the older volcanic rocks trachytes also are not scarce, though they have often been described under the names orthophyre and orthoclase-porphyry, while “ trachyte ” was reserved for Tertiary and Recent rocks of similar com- position. In England there are Permian trachytes in the Exeter district, and Carboniferous trachytes are found in many parts of the central valley of Scotland. The latter differ in no essential respect from their modem representatives in Italy and the Rhine valley, but their augite and biotite are often replaced by chlorite and other secondary products. Permian trachytes occur also in Thuringia and the Saar district in Germany.

Closely allied to the trachytes are the *Keratophyres,* which occur mainly in Palaeozoic strata in the Harz (Germany), in the Southern Uplands of Scotland, in Cornwall, &c. They are usually por­phyritic and fluidal ; and consist mainly of alkali felspar (anortho- clase principally, but also albite and orthoclase), with a small quantity of chlorite and' iron oxides. Many of them are lavas, but

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | SiO2 | Al2O3 | Fe2O2 | FeO | MgO | CaO | Na2O | K2O | H2O |
| Riebeckite trachyte, Hohenberg, Berkum, Rhenish Prussia | 66∙06 | 16∙46 | 2∙25 | 1∙10 | 0∙19 | 0∙79 | 6∙81 | 5∙52 | o∙62 |
| Keratophyre, Hamilton HiH, Peebles, Scotland | 64∙38 | 16∙98 | 4·04 | — | 0∙28 | 1∙08 | 7·57 | 4∙30 | r∙64 |
| Trachyte (Orthophyre) Garleton HiH, Haddington, Scotland  Trachyte, Monte Nuovo, Phlegraean Fields, near Naples, Italy | 61∙35 | 16∙88 | 0∙41 | 5∙01 | 0∙44 | 2∙39 | 5·26 | 6∙12 | 1∙70 |
| 60∙33 | 18∙74 | 2∙84 | 1∙29 | 0∙38 | 1∙15 | 7·15 | 7·30 | o∙56 |
| Trachyte, Algersdorf, Bohemia | 64· 69 | 18∙39 | — | 3·44 | 0∙49 | 1∙72 | 4∙61 | 6∙46 | o∙24 |

others are probably dikes or thin intrusions. As the analyses given above will show, they differ from trachytes mainly in being richer in soda. (J. S. F.)

**TRACT** (from Lat. *tractare,* to treat of a matter, through Provençal *tractat* and Ital. *trattato),* in the literary signification, a work in which some particular subject, or aspect of a subject, is treated. As far as derivation is concerned, a tract is identical with a *treatise,* but by custom the latter word has come to be used

for a lengthy monograph on a subject, dealing with it technically and authoritatively, whereas a tract is understood to be brief and rather argumentative than educational. There is, again, the rarer word *tractate,* which is not a tract, in the precise sense, so much as a short treatise.

The word “ tract ’’ has come to be used for brief discourses of a moral and religious character only, and in modern practice it seems to be mainly confined to serious and hortatory themes. An essay on poetry, or the description of a passage of scenery, would not be styled a tract. In the Protestant world, the tract which Luther composed in 1520, on the Babylonish captivity, has been taken more or less as the type of this species of literature, which, however, existed long before his day, both in Latin and in the vernacular tongues of western Europe. It is difficult, if not impossible, in early history, to distinguish the tract from other cognate forms of moralizing literature, but it may perhaps be said that the homilies of Ælfric (955- 1025?) are the earliest specimens of this class in English litera­ture. Four centuries later Wyclif issued a series of tracts, which were remarkable for their vigour, and exercised a strong influence on medieval theology. Bishop Reginald Pecock published many controversial tracts between 1440 and 1460. Sir Thomas More, John Fisher (d. 1535) and William Tyndale were prominent writers of controversial treatises. It was the Martin Marprelate agitation, in the reign of Elizabeth, which led from 1588 to 1591 to the most copious production of tracts in English literature; of these nearly thirty survive. On the Puritan side the principal writers were John Udall (1560-1592), Henry Barrowe (d. 1593), John Penry (1559-1593) and Job Throckmorton (1545-1601), the tracts being printed in the house of the last-mentioned; on the side of the Established Church the principal authors were Bishop Thomas Cooper (1517-1594) and the poets Lyly and Nash. An enormous collection of tracts was published between 1717 and 1720 in elucidation of what is known as the Bangorian Controversy, set in motion by a sermon of Benjamin Hoadly, bishop of Bangor, on “ The Nature of the Kingdom of Christ ” (1717). Convocation considered this a treatise likely to impugn and impeach the royal supremacy in religious questions. A vast number of writers took part in the dispute, and Thomas Sherlock (1678-1761) fell into disgrace through the violence of his contributions to it. Convocation was finally obliged to give way.

The most famous collection of tracts published in the course of the 19th century was that produced from 1833 onwards by Newman, Kehle and E. B. Γusey, under the title of “ Tracts for the Times.” Among these Pusey’s “ Tract on Baptism ” (1835) and his “ On the Holy Eucharist” (1836) had a profound effect in leading directly to the foundation of the High Church party, so much so that the epithet “ Tractarian ” was bar­barously coined to designate those who wished to oppose the spread of rationalism by a quickening of the Church of England. In 1841 Newman’s “ Tract No. XC.” was condemned by the heads of houses in Oxford, and led to the definite organization of the High Church forces. (X.)

*Tract Societies* are agencies for the production and distribution, or the distribution only, of Christian literature, more especially in

tract form. They vary in importance from the Society for Promoting Christian Knowledge (London), the Religious Tract Society (London) and the American Tract Society (New York)— all of which are publishing houses of recognized standing—to small and purely local organizations for distributing evangelistic and pastoral literature. It was not until the Evangelical Revival that tract work began to develop along its modern lines. Start­ing from the provision of simple evangelistic literature for home