received monetary compensations in the shape of annual sub­ventions, and these also have been paid for the losses formerly incurred by the wilful destruction of the nutmeg plantations, carried out in order to enhance the value of this commodity and monopolize its cultivation. The restrictions on nutmeg­growing have long since been removed, and many plantations, with free labour, have been started in Ternate since 1885. It is a curious fact that Christianity has declined in Ternate in modern times, though it was an early stronghold and the number of Europeans settled there has materially increased.

**TERNI** (anc. *Interamna Nahars),* a town, episcopal see, and the seat of a sub-prefecture of the province of Perugia, Italy, situated among the Apennines, but only 426 ft. above sea­level, in the valley of the Nera (anc. *Nar),* from which the town took its distinguishing epithet, 5 m. below its junction with the Velino, and 70 m. N. by E. of Rome by rail. Pop. (1906) 20,230 (town), 33,256 (commune). It has important iron and steel works and iron foundries, at which armour-plates, guns and projectiles are made for the Italian navy, also steel castings, machinery and rails, a royal arms factory, and lignite mining. Terni lies on the main railway line from Rome to Foligno and Ancona, and is the junction for Rieti and Sulmona. Its most interesting buildings are the cathedral (17th century, with remains of the earlier 13th century façade), the church of S. Francesco (partly dating from the 13th century, with some frescoes of the 14th), and other old churches. Its antiquities include traces of the city walls of rectangular blocks of tra­vertine, remains of an amphitheatre of the time of Tiberius, a temple, theatre and baths (?), and numerous inscriptions. Remains have also been found of a pre-Roman necropolis. The excavations and the objects found are described by A. Pasqui and L. Lanzi in *Notizie degli scavi,* 1907, 595 seq. Five miles to the east are the falls of the Velino *(Cascate delle Marmore).* Alike in volume and in beauty these take a very high place among European waterfalls; the cataract has a total descent of about 650 ft., in three leaps of 65, 330 and 190 ft. respectively. They owe their origin to M'. Curius Dentatus, who in 272 B.C. first opened an artificial channel by which the greater part of the Lacus Velinus in the valley below Reate was drained. They supply the motive power for the factories of the town.

Terni is the ancient *Interamna (inter amnes, “* between the rivers, ” *i.e.* the Nar and one of its branches), originally belonging to Umbria, and founded, according to a local tradition preserved in an inscrip­tion, in the year 672 B.C. It is first mentioned in history as being, along with Spoletium, Praeneste and Florentia, portioned out among his soldiers by Sulla. Its inhabitants had frequent litiga­tions and disputes with their neighbours at Reate in connexion with the regulation of the Velinus, the waters of which are so strongly impregnated with carbonate of lime that by their deposits they tend to block up their own channel. The first interference with its natural course was that of M'. Curius Dentatus already referred to. In 54 B.c. the people of Reate appealed to Cicero to plead their cause in an arbitration which had been appointed by the Roman senate to settle disputes about the river, and in connexion with this he made a personal inspection of Lake Velinus and its outlets. In the time of Tiberius there was a project for regulating the river and its outlets from the lake, against which the citizens of Interamna and Reate energetically and successfully protested (Tac. *Ann.* i. 79). Similar questions arose as the river formed fresh deposits during the middle ages and during the 15th and 16th centuries. A branch of the Via Flaminia passed from Narnia to Forum Flaminii, and is given instead of the direct line in the Antonine and Jerusalem itineraries. A road led from here to the Via Salaria at Reate. Interamna is also mentioned in Cicero’s time as being the place where Clodius wished to prove that he was on the night when he was caught in Caesar’s house at the celebration of the rites of the Bona Dea. The Emperor Tacitus and his brother Florianus were probably natives of Inter­amna, which also has been claimed as the birthplace of Tacitus the historian, but with less reason. During most of the middle ages and up till i860 Terni was subject to the popes. It was the scene of the defeat of the Neapolitans by the French on the 27th of November 1798.

**TERPANDER,** of Antissa in Lesbos, Greek poet and musician. About the time of the Second Messenian war, he settled in Sparta, whither, according to some accounts, he had been summoned by command of the Delphian oracle, to compose the differences which had arisen between different classes in the state. Here he gained the prize in the musical contests at the festival Carnea (676-2 B.C.; Athenaeus, 635 E.). He is regarded as the real founder of Greek classical music, and of lyric poetry; but as to his innovations in music our information is imperfect. According to Strabo (xiii. p. 618) he increased the number of strings in the lyre from four to seven; others take the fragment of Terpander on which Strabo bases his statement (Bergk, 5) to mean that he developed the citharoedic nomos (sung to the accompaniment of the cithara or lyre) by making the divisions of the ode seven instead of four. The seven-stringed lyre was probably already in existence. Ter­pander is also said to have introduced several new rhythms in addition to the dactylic, and to have been famous as a composer of drinking-songs.

Fragments (the genuineness of which is doubtful) in T. Bergk, *Poetae Lyrici Graeci,* iii. ; see also O. Löwe, *De Terpandri Lesbii aetate* (1869), who places him about 676 b.c.

**TERPENES,** in organic chemistry, the generic name of a group of hydrocarbons of the general formula (C5H8)n, and the more important oxygen derivatives, mainly alcohols, aldehydes and ketones, derived from them. They may be classified into several distinct groups: *hemiterpenes,* C5H8; *terpenes* proper, C10H15; *sesquiterpenes,* C15H24; and *polyterpenes* (C5H8)N. **In** addition to these, a series of open-chain olefine terpenes is known.

The chief sources of the terpenes and their derivatives are ■ the essential oils obtained by the distillation or extraction by pressure of various plants, chiefly of the Coniferae and different species of *Citrus.* Certain of these oils consist very largely of hydrocarbons; for example, those of turpentine, citron, thyme, orange, pine-needle, goldenrod (from *Solidago canadensis)* and cypress, while others contain as their chief constituents various alcoholic and ketonic substances. With the exception of camphene, all the terpenes are liquids, boiling approximately between 160° and 190° C., so that it is almost impossible to separate them from the various essential oils by fractional distillation. In order to prepare the individual members pure, advantage is taken of the different physical properties of their derivatives. The terpenes all possess a characteristic odour and are fairly stable to alkalis, but are easily decomposed by acids or by heating to a sufficiently high temperature. Many polymerize readily, or are transformed into isomers by boiling with dilute alcoholic sulphuric acid. Some oxidize rapidly on exposure to air, passing into resinous substances. The forma­tion of addition compounds with the halogens, halogen hydrides, and with nitrosyl chloride, is characteristic of many, whilst others unite readily with nitrogen peroxide. According to A. v. Baeyer *(Ber.,* 1895, 28, p. 648; 1896, 29, p. 10) the nitrosochlorides are not simple addition products, but bi- molecular compounds or bisnitrosochlorides.

HEMITERPENES

The best known is Isoprene, C5H8, which is obtained on distilling caoutchouc or gutta-percha. It was synthesized by W. Euler *(Ber.,* 1897., 30, p. 1989) by distilling the addition compound of methyl iodide and 2 · 3 · 5-trimethylpyr0llidine with caustic potash. It is an unstable liquid which boils at 33∙5° C., and on heating rapidly polymerizes to dipentene, the same change being effected by hydrochloric acid. In ethereal solution it combines with bromine to form an unstable liquid dibromide; it also unites with one molecule of hydrobromic acid to form the same tertiary bromide as dimethylallylene; this points to its being ß-methyldivinyl, CH2: C(CH3)∙CH : CH2 (V. A. Mokiewsky, *Jour. Soc. Phys. Chim. Russ.,* 1900, 32, p. 207).

Terpenes Proper

The terpenes proper may be subdivided into the simple monocyclic terpenes and the more complex (usually bicyclic) terpenes. The monocyclic terpenes are hydro derivatives of paracymene. A. v. Baeyer proposed the following nomenclature: the díhydro- paracymenes are called terpadienes, the tetrahydrocymenes be­coming terpenes and the hexahydrocymene terpan, the carbon atoms being numbered as shown in the inset formula: In the more complex terpenes the name

camphene is retained, and camphane is used for the dihydrocamphene. G.

Wagner (Ber., 1894, 27, p. 1636 Anm.)

designates the hexahydrocymenes menthans, the tetrahydrocymenes menthenes, and the dihydrocymenes menthadienes. The position