The generally accepted Indo-Germ. root is *dak-,* to bite, cf. Gr. *ô&Kvav,* and Skt. *daç,* to bite, tears being “ biting ” or “ bitter ” things. The Du. *traan,* in the sense of tear-drop, was parti­cularly applied to the blubber of whales reduced to oil by boiling, whence has come the tautological English “ train-oil,” often identified with the lubricant used for the wheels of rail­way trains. For the so-called “ tear-vessels,” which are pro­perly small vases containing unguents, see Lacrymatory.

“ Tear ” (O.E. *teran),* to pull apart violently, to rend, is, of course, a distinct word; it is cognate with Gr. δέρειν*,* to flay, pull off, and the root is seen in Gr. δέμα*,* skin, whence “dermatology,” “epi­dermis," &c.

**TEASEL.** Wild teasel is a common plant of the English copses and hedges, with a tall, stout, rigid, prickly stem, bearing large spreading opposite leaves, the midrib of which is prickly, and conspicuous oblong heads, the purplish flowers in which are subtended by very long, narrow, stiff, upright bracts. The plant is known botanically as *Dipsacus sylvestris.* Fuller’s teasel, *D. Fullonum,* in which the bracts are hooked, is probably a cultivated form of the wild species; the dry heads are used to comb up the nap on cloth. The genus *Dipsacus* gives its name to the family *Dipsaceae,* to which also belongs the Scabious *(Scabiosa),* represented in Britain by several species.

**TEATE MARRUCINORUM** [mod. Chieti, *q.v.*], the chief town of the Marrucini, the whole of whose territory was placed under its municipal jurisdiction by the Romans, after the “ Social War.” It was thus a town of some importance. Under the church of SS. Pietro e Paolo and the adjoining houses are extensive substructures (in *opus reticulatum* and brickwork) of the 1st century a.d., belonging to a building erected by **Μ.** Vectius Marcellus (probably mentioned by Pliny, *H.N.,* **II.,** 199) and Helvidia Priscilla. There are also remains of large reservoirs and of a theatre.

**TEBESSA** (the Roman Theveste), a town of Algeria in the department of Constantine, 146 m. S.E. of Bona by rail and 12 m. W. of the Tunisian frontier, on a plateau 2950 ft. above the sea. Pop. (1906) 5722. The modem town, which is within the walls of the Byzantine citadel, boasts nothing of interest save a church built out of the ancient ruins. The Byzantine walls, pierced by three gates, are in tolerable pre­servation. They are strengthened by numerous square towers. One of the gates is formed by the quadrifrontal arch of Cara­calla, a rare form of construction. The arch, erected about A.D. 212, is in good preservation. A pair of monolithic columns, disengaged, flank each façade. An inscription on the frieze gives the history of its construction; it was built by two brothers as a condition of inheriting the property of a third brother. The most important ruins are those of the great basilica. This building, one of the finest Roman monuments in Algeria, bears evidence of having been built at various epochs; the earlier portions probably date from not later than the beginning of the 2nd century a.d. The basilica was partially destroyed by the Berbers in the 5th century, and was rebuilt in a.d. 535 by the Byzantine general Solomon, who surrounded it with a wall about 25 feet high, still standing. The main building, consisting of a nave with apsidal end and two aisles, was approached through a peristyle, which was surrounded by an arcade. Many of the columns of the basilica have fallen, but the bases of all are in their original positions. A quatrefoil chapel on the east side of the basilica is a Byzantine addition. The tessellated pavement which covers the basilica proper is in almost perfect condition. It is kept covered, for purposes of preservation, by a layer of earth. Next the basilica (and within the same enclosing walls) are the ruins of the forum, converted into a monastery in the 4th or 5th century, and regarded by Sir R. Lambert Playfair as the oldest known example of the *monasteria clericorum.* The whole of the basilica and its dependencies have been cleared and are kept in order by the *Service des Monuments historiques,* the principal work having been accomplished by Héron de Villefosse. Note­worthy among the buildings within the ancient citadel is a small tetrastyle temple, variously ascribed to Jupiter and Minerva, the portico supported by six monolithic columns of cippolino, four being in front. After the French occupation in 1842, the building was used successively as a soap factory, a prison, a canteen, a parish church, and, lastly, as a museum.

Theveste was founded towards the close of the 1st century A.d. In the succeeding century it was connected with Carthage by a great highway. In the 5th century, under Vandal dominion, it declined in importance. Refounded by the Byzantines in the 6th century, the city disappeared from history at the time of the Arab conquest of the country in the 7th century. In the 16th century the Turks placed a small garrison of janissaries in the place, but Tebessa continued to be but a small village until the establishment of French rule.

Nine miles from Tebessa are the extensive phosphate quarries of Jebel Dyr, where is also an interesting megalithic village.

Sec Sir R. Lambert Playfair, *Handbook for Travellers in Algeria and Tunis* (London, 1895), pp. 233-40, *Cuides-Joanne, Algérie et Tunisie* (Paris, 1906).

**TECHNICAL EDUCATION.** The term now generally adopted to designate the special training of persons in the arts and sciences that underlie the practice of some trade or profession, is called “ technical education.” Schools in which this training is provided are known as technical schools. In its widest sense, technical education embraces all kinds of instruction that have direct reference to the career a person is following or preparing to follow; but it is usual and convenient to restrict the term to the special training which helps to qualify a person to engage in some branch of productive industry, and the instruction so provided is generally known as “ techno­logical instruction.” This specialized education may consist of the explanation of the processes concerned in production, or of instruction in art or science in its relation to industry, but it may also include the acquisition of the manual skill which production necessitates.

The terms “ technical ” and “ technological ” (Gr. *τέχvη,* art or craft) as applied to education, arose from the necessity of finding words to indicate the special training which was needed in consequence of the altered conditions of production during the 19th century. Whilst the changed conditions of production, consequent mainly on the application of steam power to machinery, demanded a special training for those who were to be engaged in productive industry, the prevalent system of education was not adapted to the requirements of these persons, and schools were wanted in which the necessary instruction could be obtained. Other circumstances resulting mainly from the application of steam power to machinery rendered technical education necessary. Production on a large scale led to a great extension of the principle of the division of labour, in conse­quence of which it was found economical to keep a man constantly engaged at the same kind of work, since the more he practised it the quicker and more skilful he became. Thus employed, the workman learned little or nothing of the process of the manufacture at which he assisted, or of other departments of the work than the particular one in which he was engaged, and his only opportunity of acquiring such knowledge was outside the workshop or factory in a technical school. The economy effected by the division of labour led to the exten­sion of the principle to other industries than those in which machinery is largely employed. There are many trades in which manual skill is as necessary now as ever, but even in these the methods of instruction prevailing under the old system of apprenticeship are now almost obsolete.

In many industries, including trades in which machinery is not as yet extensively employed, production on a large scale has increased the demand for unskilled labour, numbers of hands being required to prepare the work to be finished by a few skilled artisans. Rapidity of execution is attained by keeping a workman at the same work, which after a time he succeeds in mechanically performing and continues to do until some machine is invented to take his place. In most trades, as formerly practised, the master