beautifully decorated courts in fair repair, built by Mohammed XVII., is a prominent object above the town, and there are many interesting buildings and ruins.

SAFFLOWER (ultimately from the Arabic *safra,* yellow) or Bastard Saffron *(Carthamus tinctorius),* a plant of the natural order compositae; its flowers form the basis of the safflower dye of commerce. The plant is a native of the East Indies, but is cultivated in Egypt and to some extent in southern Europe. To obtain the dyeing principle—carthamin, C14H14O7—the flowers are first washed to free them from a soluble yellow colouring matter they contain; they are then dried and powdered, and digested in an alkaline solution in which pieces of clean white cotton are immersed. The alkaline solution having been neutralized with weak acetic acid, the cotton is removed and washed in another alkaline solution. When this second solution is neutralized with acid, carthamin in a pure condition is precipitated as a dark red powder. It forms a brilliant but fugitive scarlet dye for silk, but is principally used for preparing toilet rouge.

SAFFRON (Arab. *za'farān*), a product manufactured from the dried stigmas and part of the style of the saffron crocus, a cultivated form of *Crocus sativus;* some of the wild forms (var. *Thomasii, Cartwrightianus)* are also employed for the manu­facture. The purple flower, which blooms late in autumn, is very similar to that of the common spring crocus, and the stigmas, which are protruded from the perianth, are of a characteristic orange-red colour. The fruit is rarely formed. The Egyptians, though acquainted with the bastard safflower, do not seem to have possessed saffron; but it is named in Canticles iv. 14 among other sweet-smelling herbs. It is also repeatedly mentioned *(κρόκοs)* by Homer, Hippocrates and other Greek writers; and the word “ crocodile ” was long supposed to have been derived from *κρόκοs* and δϵιλόs, whence we have such stories as that “ the crocodile’s tears arc never true save when he is forced where saffron groweth ” (Fuller’s *Worthies).* It has long been cultivated in Persia and Kashmir, and is supposed to have been introduced into China by the Mongol invasion. It is mentioned in the Chinese materia medica (*Pun tsaou,* 1552-1578). The chief seat of cultivation in early times, however, was the town of Corycus (modern Korghoz) in Cilicia, and from this central point of distribution it may not improbably have spread east and west. According to Hehn, the town derived its name from the crocus; Reymond, on the other hand, with more probability, holds that the name of the drug arose from that of the town. It was cultivated by the Arabs in Spain about 961, and is mentioned in an English Ieech- book of the 10th century, but seems to have disappeared from western Europe till reintroduced by the crusaders. According to Hakluyt, it was brought into England from Tripoli by a pilgrim, who hid a stolen corn in the hollow of his staff. It was especially cultivated near Hinton in Cambridgeshire and in Essex at Saffron Walden, its cultivators being called “ crokers.”

Saffron was used as an ingredient in many of the complicated medicines of early times. That it was very largely used in cookery is evidenced by many writers; thus Laurenbergius *(Apparatus plantarum,* 1632) makes the large assertion “In re familiari vix ullus est telluris habitatus angulus ubi non sit croci quotidiana usurpatio aspersi vel incocti cibis.” The Chinese used also to employ it largely, and the Persians and Spaniards still mix it with their rice. As a perfume it was strewn in Greek halls, courts and theatres, and in the Roman baths. The streets of Rome were sprinkled with saffron when Nero made his entry into the city.

It was, however, mainly used as a dye. It was a royal colour in early Greek times, though afterwards, perhaps from its abundant use in the baths and as a scented salve, it was especially appropriated by the hetairae. In ancient Ireland a king’s mantle was dyed with saffron, and even down to the 17th century the “lein-croich,” or saffron-dyed shirt, was worn by persons of rank in the Hebrides. In medieval illumination it furnished, as a glaze upon burnished tinfoil, a cheap and effective sub­stitute for gold. The sacred spot on the forehead of a Hindu pundit is also partly composed of it. Its main use in England

was to colour pastry and confectionery, and it is still used for this purpose in some parts of the country (notably Cornwall).

One grain of saffron rubbed to powder with sugar and a little water imparts a distinctly yellow tint to ten gallons of water. This colouring power is due to the presence of polychlorite, a substance whose chemical formula appears to be C■HO, and which may be obtained by treating saffron with ether, and afterwards exhausting with water. Under acids it yields the following reaction—

C48H60O18+H2O = 2C16H13O6+C10H14O+C4H12O6Polychloritc. Crocin. Essential oil. Sugar.

Crocin, according to Watts, *Dict. of Chem.,* has a composition of C29H42O16 or C56H42O30 This crocin is a red colouring matter, and it is surmised that the red colour of the stigmas is due to this reaction

taking place in nature.

Saffron is chiefly cultivated in Spain, France, Sicily, on the lower spurs of the Apennines and in Persia and Kashmir. The ground has to be thoroughly cleared of stones, manured and trenched, and the corms are planted in ridges. The flowers arc gathered at the end of October, in the early morning, just when they are beginning to open after the night. The stigmas and a part of the style are carefully picked out, and the wet saffron is then scattered on sheets of paper to a depth of 2 or 3 in.; over this a cloth is laid, and next a board with a heavy weight. A strong heat is applied for about two hours so as to make the saffron “ sweat,” and a gentler temperature for a further period of twenty-four hours, the cake being turned every hour so that every part is thoroughly dried. This is known as *cake saffron* to distinguish it from *hay saffron,* which consists merely of the dried stigmas.

The drug has naturally always been liable to great adulteration in spite of penalties, the severity of which suggests the surviving tradition of its sacred character. Thus in Nuremberg a regular saffron inspection was held, and in the 15th century we read of men being burned in the market-place along with their adulterated saffron, while on another occasion three persons convicted of the same crime were buried alive. Grease and butter are still very frequently mixed with the cake, and shreds of beef dipped in saffron water are also used. Good saffron has a deep orange-red colour; if it is light yellow or blackish, it is bad or too old.

SAFFRON WALDEN, a ■■ and municipal borough in the Saffron Walden parliamentary division of Essex, England, beautifully situated near the Cam in a valley surrounded by hills, on a branch of the Great Eastern railway, 431/2 m. N.N.E. from London. Pop. (1901) 5896. It has a somewhat ancient appearance and possesses a spacious market-place. Of the old castle, dating probably from the 12th century, but in part protected by much earlier earthworks, the keep and a few other portions still remain. Near it are a series of curious circular excavations in the chalk, called the Maze, of unknown date or purpose. The earthworks west and south of the town are of great extent; there was a large Saxon burial-ground here. The church of St Alary the Virgin, a beautiful specimen of the Perpendicular style, dating from the reign of Henry VII., but frequently repaired and restored, contains the tomb of Lord Audley, chancellor to Henry VIII. There is an Edward VI. grammar school, occupying modern buildings. The town pos- sesses a museum with good archaeological and natural history collections, a literary institute and a horticultural society. The benevolent institutions include the hospital and the Edward VI. almshouses. There is a British and Foreign School Society’s training college for mistresses. In the neighbourhood is the fine mansion of Audley End, built by Thomas, 1st carl of Suffolk, in 1603 on the ruins of the abbey, converted in 1190 from a Benedictine priory founded by Geoffrey de Mandeville in 1136. Brewing, malting and iron-founding are carried on. The borough is under a mayor, 4 aldermen and 12 councillors. Area, 7502 acres.

Saffron Walden *(Waledana)* was almost certainly fortified by the Britons, and probably by some earlier race. The town corporation grew out of the Gild of the Holy Trinity, which was incorporated under Henry VIII., the lord of the town, in 1514. It was dissolved under Edward VI., and a charter was obtained for Walden, appointing a treasurer and chamberlain and twenty- four assistants, all elective, who, with the commonalty, formed the corporation. In 1694 William and Mary made Walden a free borough, with a mayor, 4 aldermen and 12 town councillors. The corporation became a local board of health under the act of r858, and a municipal borough in 1875. The culture of saffron was the most characteristic industry at Walden from the reign of Edward III. until its gradual extinction about 1768.