pical countries. The ſtalk is herbaceous, the leaves pinnated, oval, pointed, and deeply divided. The flowers are on ſimple *racemi :* they are ſmall and yellow. The berry is of the ſize of a plum ; they are ſmooth, ſhining, ſoft ; and are either of a yellow or reddiſh co­lour. The tomato is in daily uſe ; being either boiled in ſoups or broths, or ſerved up boiled as garniſhes to fleſh-meats.

4. *Melongena,* the egg-plant, or vegetable egg. This is alſo cultivated in gardens, particularly in Jamaica. It ſeldom riſes above a foot in height. The ſtalk is her­baceous and ſmooth ; the leaves oval and downy ; the flowers are large and blue ; the fruit is as big, and very like, the egg of a gooſe. It is often uſed boiled as a vegetable along with animal food or butter, and

suppoſed to be aphrodiſiac and to cure ſterility.

5. *Longum.* This plant is alſo herbaceous, but grows much ranker than the foregoing. The flowers are blue; and the fruit is six or eight inches long, and propor­tionally thick. It is boiled and eaten at table as the egg-plant.

6. *Tuberoſum,* the common potato. See Potato.

SOLAR, ſomething belonging to the Sun.

*SOLAR-Spots.* See ASTRONOMY-Index.

SOLDAN. See Sultan.

SOLDANELLA, in botany : A genus of plants belonging to the claſs of *pentandria,* and order of *monogynia ;* and in the natural ſyſtem arranged under the 21st order, *Preciae.* The corolla is campanulated ; the border being very finely cut into a great many ſegments. The capſule is unilocular, and its apex poly- dentate.

SOLDER, Sodder, or *Soder,* a metallic or mineral compoſition uſed in ſoldering or joining together other metals.

Solders are made of gold, ſilver, copper, tin, biſmuth, and lead ; uſually obſervſing, that in the compoſition there be ſome of the metal that is to be ſoldered mixed with ſome higher and finer metals. , Goldſmiths uſually make four kinds of ſolder, viz. ſolder of eight, wſhere to ſeven parts of ſilver there is one of braſs or copper ; ſolder of six, where only a ſixth part is copper ; ſolder of four, and ſolder of three. It is the mixture of cop­per in the ſolder that makes raiſed plate come always cheaper than flat.

As mixtures of gold with a little copper are found to melt with leſs heat than pure gold itſelf, theſe mix­tures ſerve as folders for gold : two pieces of fine gold are ſoldered by gold that has a ſmall admixture of cop­per; and gold alloyed with copper is ſoldered by ſuch as is alloyed with more copper : the workmen add a little ſilver as well as copper, and vary the proportions of the two to one another, ſo as to make the colour of the ſolder correspond as nearly as may be to that of the piece, A mixture of gold and copper is alſo a ſolder for fine copper as well as for fine gold. Gold being particularly diſpoſed to unite with iron, proves an ex­cellent ſolder for the finer kinds of iron and ſteel inſtruments.

The ſolder uſed by plumbers is made of two pounds of lead to one of block-tin. Its goodneſs is tried by melting it, and pouring the bigneſs of a crown piece on a table ; for, if good, there will ariſe little bright ſhining stars therein. The ſolder for *copper* is made like that of the plumbers ; only with copper and tin; and for

very nice works, inſtead of tin, they ſometimes uſe a quantity of ſilver. Solder for *tin* is made of two-thirds of tin and one of lead, or of equal parts of each ; but where the work is any thing delicate, as in organ pipes, where the juncture is ſcarce diſcernible, it is made of one part of biſmuth and three parts of pewter. The pewterers uſe a kind of ſolder made with two parts of tin and one of biſmuth ; this compoſition melts with the leaſt heat of any of the folders.

Silver ſolder is that which is made of two parts of ſilver and one of braſs, and uſed in ſoldering thoſe me­tals. Spelter ſolder is made of one part of braſs and two of spelter or zinc, and is uſed by the braziers and copperſmiths for ſoldering braſs, copper, and iron. This ſolder is improved by adding to each ounce of it one pennyweight of ſilver ; but as it does not melt without a conſiderable degree of heat, it cannot be uſed when it is inconvenient to heat the work red-hot ; in which caſe copper and braſs are ſoldered with ſilver.

Though spelter ſolder be much cheaper than ſilver- ſolder, yet workmen in many caſes prefer the latter. And Mr Boyle informs us, that he has found it to run with ſo moderate a heat, as not much to endanger the melting of the delicate parts of the work to be ſoldered; and if well made, this ſilver ſolder will lie even upon the ordinary kind itſelf ; and ſo fill up thoſe little cavities that may chance to be left in the firſt operation, which is not eaſily done without a folder more eaſily fuſible than the firſt made uſe of. As to iron, it is ſufficient that it be heated to a white heat, and the two extremities, in this ſtate, be hammered together ; by which means they become incorporated one with the other.

SOLDIERING, the joining and faſtening together of two pieces of the ſame metal, or of two different metals, by the fuſion and application of ſome metallic compoſi­tion on the extremities oſ the metals to be joined.

To folder upon ſilver, braſs, or iron : Take ſilver, five pennyweights ; braſs, four pennyweights ; melt them to ether for ſoft folder, which runs sooneſt. Take ſilver, five pennyweights; copper, three pennyweights; melt them together for hard folder. Beat the folder thin, and lay it on the place to be ſoldered, which muſt be firſt fitted and bound together with wire as occaſion requires ; then take borax in powder, and temper it like pap, and lay it upon the folder, letting it dry ; then cover it with live coals, and blow, and it will run immediately ; take it preſently out oſ the fire, and it is done. It is to be obſerved, that if any thing is to be ſoldered in two places, which cannot well be done at one time, you muſt firſt ſolder with the harder ſolder, and then with the ſoft ; ſor it it be firſt done with the ſoft, it will unsolder again before the other is faſtened. Let it be obſerved, that if you would not have your ſolder run about the piece that is to be ſoldered, you muſt rub ſuch places over with chalk—In the ſoldering either of gold, ſilver, copper, or either of the metals above mentioned, there is generally uſed borax in pow­der, and ſometimes rosin. As to iron, it is ſufficient that it be heated red-hot, and the two extremities thus hammered together, by which means they will become incorporated with each other. For the finer kinds of iron and ſteel inſtruments, however, gold proves an ex­cellent folder. This metal will dissolve twice or thrice its weight of iron in a degree of heat very far leſs than that in which iron itſelf melts ; hence if a ſmall plate of