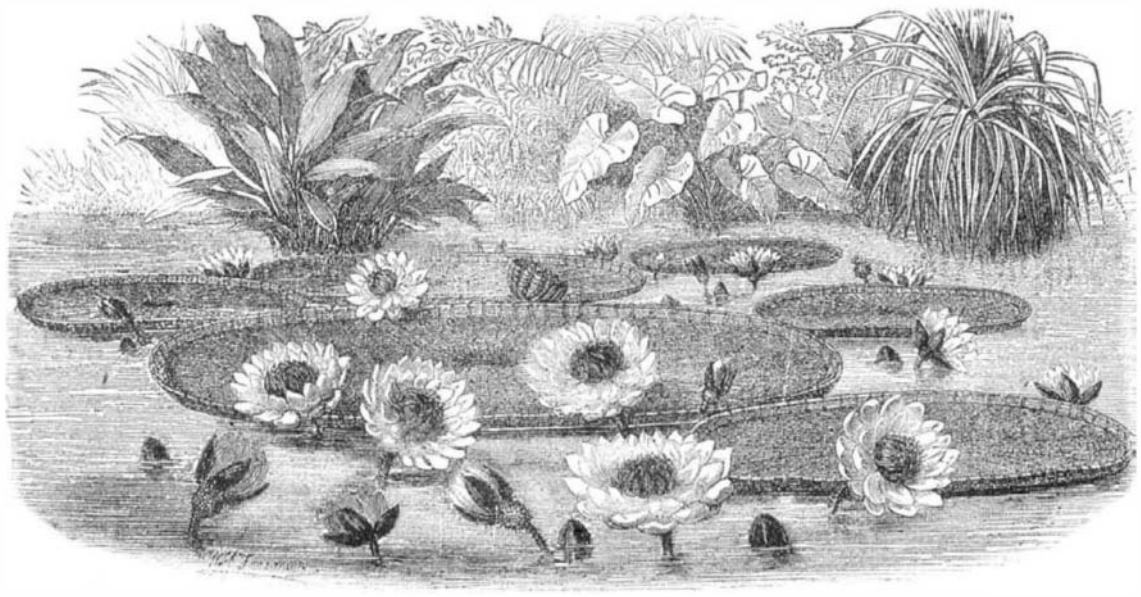
THE CULTIVATION OF THE VICTORIA REGIA.

The English *Garden* gives the following description of the cultivation of the water lily of the Amazons, known as the Victoria Regia: The indoor culture of this plant is very simple. Although not naturally an annual, it flowers much better when treated as one, seedlings being raised every winter. These are simply planted out, in the spring, on a mound of richly manured compost, the temperature of the surrounding water being kept as near 80° Fah. as possible, by means of hot water pipes which are conducted round the bottom of the tank. In order to keep the water fresh and sweet, some system must be adopted to secure circulation, and this may be obtained by having water constantly flowing into the tank on one side with an outlet at the other. Some cultivators employ a small overshot wheel, which is turned by the inflowing water, and at the same time keeps the whole body of the water in constant motion. This appliance is, however, not absolutely necessary, as the inlet and outlet pipes, with a constant supply of fresh water, are all that are requisite to insure success. There are, however, many situations out of doors in which this plant will not only make a luxuriant growth, but produce flowers during the summer months. It has already flowered at several places in England, where tanks have been formed to receive the condensed steam from the engines of water works or manufactories, and in favorable situations like these it deserves a fair trial. The main elements of success consist in having a strong, healthy, well established plant ready for planting out in the latter end of May or beginning of June; and in order to prevent the growth being checked, it would be advisable to have the young specimen planted in a coarse basket of wickerwork, using a rich compost of sandy loam and well rotted hotbed manure. This basket and its contents would not take up much room in a shallow tub or tank in the plant stove, and when the mild weather arrives the plant could be gradually hardened off; and the basket and its contents might then be placed in a suitable position in the open air tank. The plant is readily propagated from seed sown during the winter months, or nearly as soon as it is ripe.

The plant is a native of Guiana, where it occurs in the Parana river, and in South America, being found abundantly in some of the sheltered tributaries of the Orinoco, and also in those of the Amazon. In its native habitat, the flowers acquire a richer rosy tint than in hothouses, where it is a rarity to see more than one of its delicately perfumed flowers open at the same time. The leaves of this species are frequently 6 feet, or even more, in diameter, and float on the surface of the water, being supported by a beautiful network of hollow veins. The under surface of the great table-like expansion is of a rich purple color, the upper surface being deep green. The plant is frequently to be seen in bloom at Kew, Chatsworth, and many other celebrated gardens in England. We select the excellent engraving of this beautiful exotic from the pages of our cotemporary above mentioned.



THE VICTORIA REGIA WATER LILY.

The Society for the Promotion of Scientific Industry.

We have received, by the courtesy of Mr. Frank Spence, from Manchester, England, the report of this recently instituted body, which has already done good service to the scientific industries by carrying to a successful issue the recent exhibition of devices for the economical consumption of fuel. Some excellent inventions, called forth by this competition, have been illustrated and described in our journal. The society also sent thirty-four skilled workmen to Vienna as reporters, and their accounts of the Exposition and their criticism of the exhibits are interesting and valuable. The institution also publishes a journal, intended to keep its members posted as to contemporary events. It numbers many important leaders of the scientific and industrial specialties among its members, and seems to be doing much useful work.

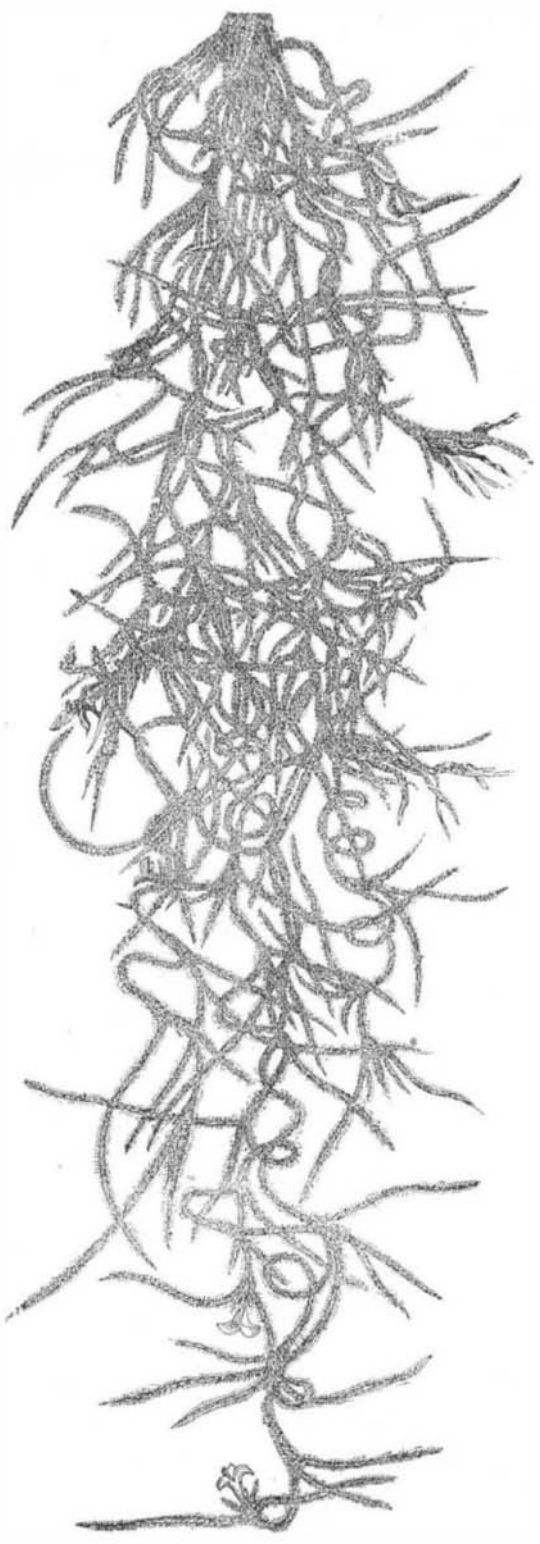
Importance of Salts in Food.

Mr. Foster has made some interesting experiments on dogs and pigeons, which show that animals suffer and die when inorganic salts are altogether absent from their food, although the other nutritive constituents may be abundant. In all the animals tried, there was a condition of muscular weakness, tremor, and general exhaustion. In the dog, the muscles of the posterior extremities, from the second week of the experiment onward, gradually assumed a paralytic character, as when the function of the spinal cord is weakened. The activity of the cerebrum was also impaired, as was evident from the bluntness of the senses and apathy of the animal. Later on, increased excitability often appeared; the dogs were terrified at any quick motion; one had a brief attack of madness, but soon crouched down trembling and growling. On being taken out, it ran forward and knocked its head violently against a wall. After the animals had been deprived of salts for some time, the juices of the intestinal canal either lost their digestive power or were not secreted in proper quantity, and nutrition was thus interfered with. Death took place, however, from the alterations in the nervous system, before there had been time for it to occur from inanition. The quantity of salts necessary to life is smaller than is generally supposed, but the exact amount required is still to be determined.

These experiments amount practically to a scientific exposure of the unnaturalness and consequent abnormality of the use of sifted wheat flour the principal food of women and children, and of too many men. The inorganic salts are almost absent from this artificial food, the chief material weakness of modern pseudo-civilization. Mr. Foster's experiments are contributed to the *London Medical Record*.

LONG MOSS.

There is a singular and beautiful parasite, known by the name of long moss, to be found pendent from forest trees in nearly all the Southern States. It is especially abundant upon those which grow in damp situations. It is sometimes found only here and there in small tufts, but frequently it is in such quantities upon a tree as to appear to fill all the spaces between its branches, and from the lower limbs it hangs in pendent tufts several feet in length, which, as they are swayed by the wind, wave with a certain amount of grace. In localities where it is abundant, its dull gray color and general drooping habit produce a very somber effect. As it grows most luxuriantly in situations which, from being constantly moist, are unhealthy, it is easy to associate it with disease and death, and in some localities it bears the not very cheerful name of coffin fringe. Though popularly called moss, it does not belong to mosses, properly so called, at all, but, strange as it may seem, to the pineapple family, the *bromeliaceæ*. Its botanical name is *Tillandsia usneoides*, and was named in honor of a Russian professor, Tillands. Its specific name means "resembling usnea," a long drooping lichen which hangs from northern trees in a similar manner.



Aside from forming a striking feature in the landscape, says *The American Agriculturist*, the long moss is of no little economical importance. The central portion, exceedingly tenacious and elastic, has long been employed as a substitute for hair. The plant is found in Central and South America and the West Indies, and has been put to so many uses by the Spanish Americans that in some localities it is known as Spanish moss. The primitive method of procuring the fiber is to place the moss in shallow ponds, exposed to the sun, to rot the somewhat fleshy outer covering; it is then taken out and allowed to dry, after which a moderate beating removes the outer portion, and the fiber is left in a black tangled mass, which, but for its branching character, it would be difficult to distinguish from hair. Northern people, traveling in the South, frequently send home specimens of this moss, and we have seen it suspended from trees growing on lawns in several places during the past summer.

Population of the United States.

The first census of the country was taken in 1790, and decennial censuses have been taken ever since. An estimate has been made for the ten years previous to 1790, from the data of years 1790, 1800, 1810, and 1820 An examination of these years exhibited successively by subtraction two second differences that were nearly equal, so much so as to indicate in general, as the law of their progression, approximately, constant second differences. From the average of these second differences, treated as a second difference for completing the series, the population for the year 1780 was estimated at 3,070,000.

The present and prospective population of the United States is as follows:

1870.....38,558,371	1876.....45,316,000
1871.....39,555,000	1877.....46,624,000
1872.....40,604,000	1878.....47,983,000
1873.....41,704,000	1879.....49,395,000
1874.....42,856,000	1880.....50,858,000
1875.....44,060,000	

No Coal in California.

Dr. J. C. Cooper, who has made the most careful surveys of the State, says that the geological facts are all against the probability of the existence of any true coal measures in California. In ninety-nine cases out of a hundred, the alleged coal discoveries are of no value whatever. In other countries, the true coal of the carboniferous rock is formed of tree ferns, algæ, and other plants of low organization. None of these remains are found in California, but in their stead are found the remains of coniferous and dicotyledonous trees, or those having double-lobed leaves, the beds in which they are found being classed by geologists as lignites. In some parts of the State, this lignite is found in useful quantities, and may be employed, like peat, for local consumption.

A New Material for Aniline Lake.

Professor R. Böttger finds that when an alcoholic solution of any aniline color is mixed with a sufficient quantity of infusorial earth (sometimes called mountain flour, a minutely divided silica), water added, and the mixture placed on filtering paper, the liquid will run off clear, while the earth retains all the pigment. Hitherto compounds of alumina only have been used for such purposes, to make the so-called lakes (carmine lake, madder lake, etc.) The behavior of the excessively cheap infusorial earth to the aniline colors here described will undoubtedly lead to some practical application.

A RECENT test of the relative strength of oak and Oregon pine, made at San Francisco, with bars each 1 inch square and 3 feet long, showed that the pine was equal to the oak. Both broke under the same weight placed in the middle of each bar, namely 260 lbs.