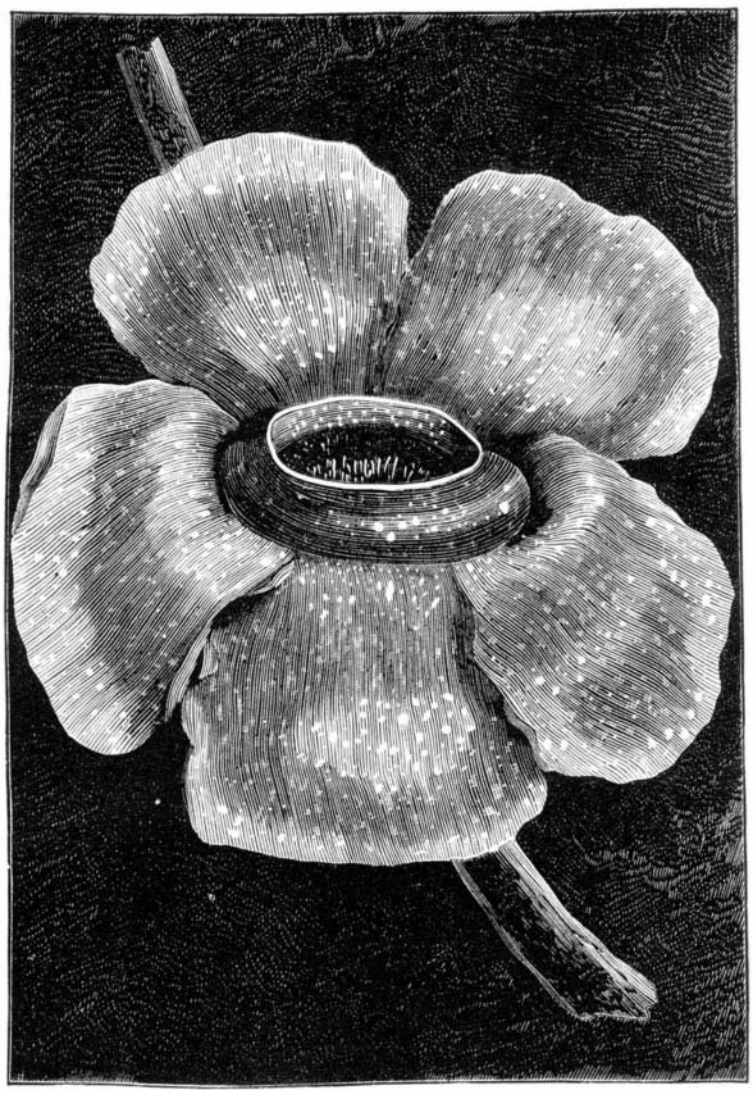
THE LARGEST FLOWER IN THE WORLD.

The wonderful flower represented in our engraving is that of the *Rafflesia Arnoldi*, a plant discovered by Dr. Arnold in the Island of Sumatra some sixty years ago. The various species now known are all parasitic, not, however, to the branches of other plants, but to the roots. Entirely destitute of leaves and green in color, these singular vegetables are provided with scales or bracts which conceal and envelope the flower previous to opening. A swelling beneath the bark of some huge surface-appearing root of a large tree announces the coming of a flower. Soon the bark splits, and the bud, resembling the head of a young cabbage, bursts, showing five great lobes which open and roll back slightly on the edges. Then a circular ring appears surrounding a deep cup, in the center of which is the ovary. Below the edges is a kind of gallery wherein are numerous stamens in which is located the pollen, the fecundating action of which it is impossible to comprehend unless it be assumed that insects intervene for its transportation.

The remarkable feature of the flower is its colossal size, the largest species, here represented, being 39 inches in diameter. The central cup holds six quarts of liquid, and the total weight of the flower is over 15 lbs.

The *Rafflesia patina* of Java is somewhat smaller in size. The brick red color of the perianthus, as well as the lighter spots with which it is sprinkled, give to the flower a curious flesh like appearance. The cup and the central plateau carrying the stamens are of a dark red, while the odor of the plant is almost meat-like. In Java, the natives regard the flower as sacred, and the priests prepare from the tannin which it contains an astringent mixture useful in cases of hæmorrhage.



THE RAFFLESIA.

Bronzing Composition.

A composition of about 6 parts sulphate of potassium or similar sulphate, 6 parts of salt of lead, 12 of ammonia or similar salts, 3 parts acetic acid, 3 of hydrochloric or similar acids, when in combination, form a mixture with which Mr. L. J. Roucou, of Birmingham, England, gives to articles manufactured of copper, brass, zinc, or other metals, the color of bronze, as desired, by bath or application. By altering the proportions, and adding or taking away from any of the above described substances, he obtains a different mixture, which, when applied to the surface of works or articles made of gold, silver, and other metals, whether by brushes or otherwise, will preserve to the said works and articles their original color, and prevent their oxidization.

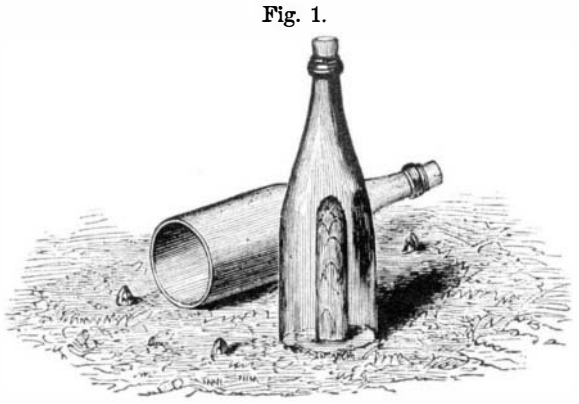
The Andes and the Amazon.

In a review of this new work by Professor James Orton, of Vassar College, the editor of *Nature* says: "We know of no single work containing a fuller, more brilliantly written, and at the same time more trustworthy general account of the basin of the Amazon and its many wonders. We are sure that all into whose hands the work may fall will agree that few more attractive and at the same time more instructive works of travel have been written." We may add that a considerable portion of the valuable information given in this work was originally presented to the public in the SCIENTIFIC AMERICAN, in the series of letters written to us from Brazil and Peru by Professor Orton during his original explorations. He is now again in South America making further investigations of the same region; and if his time permits our readers will have some additional contributions from his pen.

ASPARAGUS IN WINTER.

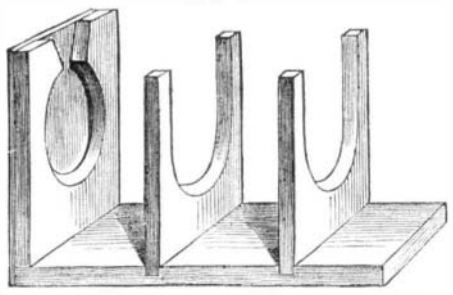
There is probably no vegetable that repays the trouble of artificial cultivation better than asparagus. It grows rapidly and attains great size when properly cared for; and it may be made a source of great profit, large quantities of it being grown under glass in France, and sold in winter at high prices. M. Jacquisson, of Chalons, France, a well known horticulturist, has introduced a plan of forcing asparagus, so simple that our engraving (Fig. 1) is sufficient to explain it. He uses an ordinary wine bottle with the bottom cut off. These bottomless bottles, when well corked, are placed over the asparagus head just as it is beginning to rise above the ground. The asparagus being thus protected not only grows fast, but is so tender that the whole of it may be eaten. The air being kept from it, the development of the woody fiber of the plant is retarded, while that of the cellular tissue is accelerated. Cultivated in this way, asparagus is as expeditiously cut as when grown in the ordinary manner, sufficient light passing through the bottle to show when the heads are ready for gathering. In addition to this, the small amount of light which passes through the bottle gives the asparagus a rosy tinge which greatly improves its appearance.

Fig. 1.



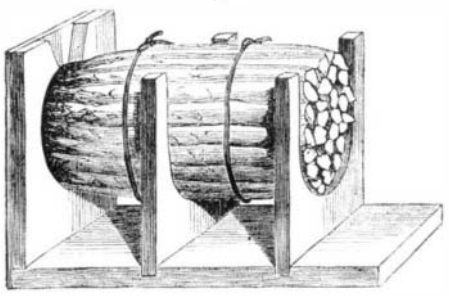
Numerous simple devices for holding the heads of asparagus while they are being tied in bunches are in use; and they are useful to the gardener, as carefully put up bunches are far more salable than irregular bundles of unevenly arranged heads. Fig. 2 shows an implement of this kind,

Fig. 2.



called the Sartrouville buncher. When filled, the tips of the heads are brought close together, the diameter of the space for the tips being less than that of the other openings in the

Fig. 3.



upright boards. When the frame is nearly full, the shoots are passed in through the wedge-shaped opening shown. Fig. 3 shows the same buncher when filled.

A New Solvent for Silk.

Schlossberger first suggested the use of an ammoniacal solution of protoxide of nickel for dissolving silk. Persoz proposed to use chloride of zinc, and Spiller used concentrated hydrochloric acid. J. Loewe recently described a new solvent, the cold alkaline solution of copper with glycerin, which is not inferior to the above, and with great dilution surpasses them. In very weak solutions, the silk is acted upon slowly; if moderately concentrated, the silk swells up on moistening it a short time; and with a larger quantity it soon dissolves to a thick liquid, which can be filtered, although it filters slowly. By adding hydrochloric acid to the filtrate, the dissolved silk separates in the form of a white jelly; frequently this separation is very slow, and the filtrate appears like a cold solution of gelatin. Wool, cotton, and linen, after being in contact with this solution for hours, is neither attacked by it nor taken up by it. It appears as if the solvent power of the alkaline glycerin and copper solution only extends to the silk. In mixed fabrics, the silk may be readily detected, and even quantitatively determined.

Silk which has been dyed black with iron salts dissolves with more difficulty and less completely, for the reason that the fibers are surrounded and protected by the insoluble oxide of iron. Such silk should be soaked for some time in sulphide of potassium or ammonium, and washed, and the sulphide of iron thus formed dissolved out with dilute hydrochloric acid. It then dissolves more readily, because of the partial removal of the iron. By treating the sample with dilute hydrochloric acid and metallic zinc, in special cases, this end may be accomplished. Silks dyed with other colors do not exhibit this difference in solubility, which depends upon the protecting action of the iron salts. In black mixed fabrics this treatment must precede the test for the other fibers. White wool acquires a blue-black color in the copper solution, but this is easily removed by an acid bath.

The alkaline copper solution is prepared as follows: Dissolve 16 parts of pure sulphate of copper in 144 to 160 parts of distilled water, and add 8 to 10 parts of pure glycerin, specific gravity 1·24, and mix thoroughly by shaking. Into this, while cold, drop slowly a solution of caustic soda until the light blue precipitate of hydrated oxide of copper at first formed is completely dissolved to a dark blue liquid, which is preserved without filtering in a closely corked bottle. If the ingredients are pure, it will keep for an indefinite length of time without the slightest change. It should not be kept in glass stoppered bottles unless the stoppers are waxed.

This solution may also be used hot to detect the presence of grape sugar or glucose, in the usual manner.

THE PINKS.

A French contemporary remarks with much reason that the constant production of novelties in floriculture has caused many beautiful flowers to disappear from our gardens. Rare and new varieties engage so much attention that the simple originals, from which so many costly specimens are directly derived, are almost forgotten. The pelargonium is now sought for, not the geranium; the tea rose and the yellow rose are more frequently seen in hot houses than the hundred-leaved and the moss roses with which we used to be familiar; and the carnation has caused the humble pink to be slightingly passed by. But the last named flower is one of singular beauty, and is known in great variety of colors and delicate gradations of tint; and its blossoms, which are grouped together at the top of firm stalks, are particularly well adapted to bouquets. It is hardy, and will readily accommodate itself to change of soil and climate. It is readily multiplied by slips or cuttings, although it may be grown from seed; and a mass of the plants two or three feet in diameter will form when in full blossom an ornament on which any garden may fairly boast itself. Three distinct

shades of color are shown in our engraving; but the number of tints of this pink family is very large, and all the varieties yield a powerful and agreeable fragrance.

A TRANSPARENT mucilage of great tenacity may be made by mixing rice flour with cold water, and letting it gently simmer over the fire.