

which the teeth all point downward when growing; all the species are found on tree trunks. They are easily recog-



FIG. 2265.—*Catastoma circumscissum*. One of the Lycoperdales. Natural size. a, Shows the outer peridium rupturing at the equator; b, shows the upper part removed and overturned with the inner peridium rupturing with a single crater at a point originally at its base; and c, shows the lower half of the outer peridium left as a cup in the earth after the removal of b. (After Morgan.)

nized by their teeth, and the three common species, *Hydnum coralloides*, *H. erinaceus*, and *H. caput-ursi* are all equally edible.

Two pileate species are also edible; *H. repandum* with yellowish or whitish-yellow pileus and teeth very brittle, and *H. imbricatum*, brown with overlapping scales on the pileus and grayish teeth.

4. CLAVARIACEÆ.—The club-fungi growing in the form of coral-like masses with the branches pointing upward in growth contain several edible species. None of them are dangerous, and they form a good subject for experimentation as they are often abundant in moist woods.

It will be readily seen from the above sketch that no hard and sharp rules can be given that will distinguish edible species of mushrooms from poisonous. Like the higher plants there are good, bad, and indifferent species, and the separate species can best be learned as good or bad by intimate acquaintance with them, the same as we have become able to distinguish apples from pears and carrots from radishes by learning each one separately.

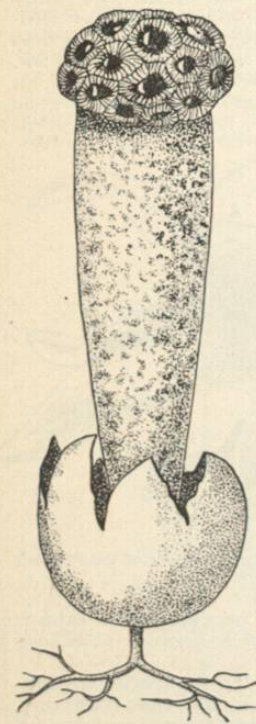


FIG. 2266.—*Simblum rubescens*. One of the Phalloids. In life the stem is reddish; in the early stage the entire plant is enclosed in the cup-like base, then in the form of an egg. (After Gerard.)

ball is pure white and much the consistence of cottage cheese that it is suitable for food, and any indication of darkening, caused by the ripening of the spores, should cause the plant to be rejected.

A smaller fungus is commonly seen in *Bovista plumbea*, which is only an inch or so in diameter, but is considered a delicacy in some places. The numerous smaller species of *Lycoperdon* are likewise edible, but are usually too small to be considered available for food. Allied to the puff balls are the curious earth-stars of which no less than three genera are represented in America. Fig. 2264 represents the least common form. *Geaster*, more common, differs mainly in being attached to the outer peridium at one point and opening by a single crater.

Another puff ball with the curious habit of overturning and opening at the bottom of the inner peridium is seen in *Catastoma*, whose life history was first studied by Morgan (Fig. 2265).

The stink-horns belong to an order (Phallales) distinct from the puff balls (Lycoperdales). These well-known members of the group are reputed poisonous and all doubtless contain phallin as one of their constituents. They form underground in the shape of an egg, and this bursting allows the rapid distention of the stem by means of which the spore mass is carried up where flies may be attracted to it and aid in their dispersion. Three of the larger species are more or less common throughout the country, and there are several curious forms less widely known, one of which is represented in Fig. 2266.*

Lucien M. Underwood.

FURUNCLE. See Boil.

GAINESVILLE (GA.) MINERAL SPRINGS.—The town of Gainesville is located in Hall County on a small tableland 1,300 feet above the sea-level, and lies between the headwaters of the Oconee River, which flows into the Atlantic, and those of the Chattahoochee, which finds its way to the Gulf. The Alleghanies, stretching around the place to the north and west, form a natural bulwark which breaks the force of the northern winds of winter. The town thus enjoys a dry, bracing climate, without extremes of either heat or cold. Daily observations made for the United States Signal Service during the period of ten years showed a mean winter temperature of 44° F. and a mean summer temperature of 71° F. The health tables of the United States census show a lower death rate in this portion of Georgia than in any other section of the country. White, in his "Statistics of Georgia," makes the statement that no case of consumption was ever known to originate in Hall County. In close proximity to the thriving and rapidly growing little city are numerous mineral springs, some of which have come into use as health resorts. We have thought it advisable to consider these springs in the following group:

Gower Springs form one of the chief attractions of the city. They are located just beyond the corporate limits, and are connected with the city by a street-car line. These springs are chalybeate in character, the iron being held in solution by carbonic acid, which makes it readily assimilable. The following qualitative analysis was made some years ago by Prof. W. J. Land, of Atlanta:

Free carbonic acid.	Iron crenate.
Hydrosulphuric acid.	Lithium phosphate.
Iron carbonate.	Calcium sulphate.
Manganese carbonate.	Magnesium sulphate.
Iron apocrenate.	Potassium bromide.
Potassium sulphate.	Oxygen gas.
Sodium sulphate.	Nitrogen gas.

An excellent hotel is maintained at the Springs, and we are informed that an increased number of visitors come to the resort every year. The waters are recommended in general debility, digestive disorders, and kidney affections.

The *Deal Spring*, located two miles from the city, wells up in a basin of solid rock, and is said to possess excellent properties in the treatment of indigestion and dyspepsia and in the dentition period of children.

*The present illustrations are reproduced from a series used to illustrate an introductory work on fungi, by the author of this article, "Moulds, Mildews, and Mushrooms," New York, Henry Holt & Co.

The *New Holland Springs* are also within two miles of Gainesville, on the Southern Railroad, which has a station at the Springs. The improvements consist of a hotel and cottages for two hundred guests. The situation is in a beautiful and extensive grove of native oaks, and the Springs furnish about two hundred gallons of water per minute. The water is recommended for indigestion and general debility, but we are unable to present a complete analysis in verification of its claims. An old qualitative examination showed the presence of the following ingredients:

Calcium carbonate.	Iron, probably combined with carbonic acid.
Magnesium carbonate.	Sodium chloride.
Potassium carbonate.	Carbonic acid gas.

James K. Crook.

GALACTAGOGUES.—(Gr. γάλα, milk, and ἀγειν, to lead.) The secretion of milk is normally associated with pregnancy, but may occur in pseudocyesis, and in ovarian and uterine tumors. It is often seen during the first week of life, in both male and female children. The secretion of milk may be established and maintained by the application of a nursing child to the breast of a woman who is not at the time and never has been pregnant. In one case a child eight years old nursed her mother's infant for some months, and in another a woman, fifty-nine years old, ten years after the cessation of menstruation, nursed a child for some time.

The length of time during which the milk may continue to be secreted varies from nine to sixteen months, but in rare cases this period may be prolonged for as long a time as five years, if the child be allowed to nurse.

The causes of defective lactation are various in character. Thus, for example, there may be some mechanical interference with the escape of the milk, as when the lactiferous tubes and acini are not developed, or the epithelial cells are imperfect, or a previous injury or disease has caused total destruction of the glandular tissue. These conditions are not amenable to treatment. On the other hand, when there is simply a lack of development, or the gland and nipple have received some trifling injury, the condition should be investigated and treated before the end of gestation. The breast of every pregnant woman should be examined by her physician three or four months before the expected confinement, and if the breasts are found to be small and poorly developed and the nipples fissured or depressed, appropriate treatment should be instituted. If the nipples are hard, the application of some bland aseptic oil or ointment—e.g., lanolin and boric acid—will be found useful as a means of softening them. The breast should be massaged, and at the same time the nipples should be drawn out by grasping them between the thumb and finger, while with the other hand the breast is stroked toward the nipple. This should be done daily for five or ten minutes at a time. The adoption of these measures will enable the child, when placed at the breast—which should be done as soon after labor as the mother's strength will permit—to grasp the nipple effectively. After this first attempt at nursing, the child should be placed at each breast, alternately, every four hours. Should the child be unable to grasp the nipple, the latter should be drawn out with the breast pump or a clay pipe, and, if this does not prove sufficient, a glass nipple shield, with rubber nipple, should be employed. The sucking of the child is the best stimulus to the flow of milk, and should always be obtained if possible; but, if the child cannot be made to nurse, then suction will have to be made with the breast pump for five or ten minutes every four hours. The breast at the birth of the child contains colostrum, and at the end of from thirty-six to sixty hours ripe milk. During the first period the child should be nursed every four hours, but afterward, on the appearance of ripe milk, it should be nursed every two hours.

Another cause of defective lactation is a plethoric state

of the body, a condition which readily responds to treatment. The diet should be carefully regulated, milk being made one of its chief constituents, and all stimulants should be avoided. The extract of thyroid gland should also be prescribed in five-grain doses. Under this plan of treatment, combined with the occasional administration of a dose of castor oil, the obstruction to the flow of milk should soon disappear. In these cases the use of the thyroid gland extract not only increases the flow of milk, but at the same time improves its nutritive quality.

Torpor of the mammae is another cause of inactivity of their secretory apparatus, and when this is the case great benefit may be derived from the application of electricity. Both poles having been moistened, the positive one is placed deep in the axilla or on the back, while the negative one is applied gently over the nipple. The current employed should be no stronger than is agreeable to the patient, and this mode of applying it should be continued for about two minutes. Afterward, the negative pole should be glided along the sides of the breast, in a stroking fashion, for another two minutes. Then, finally, the poles should be applied to the sides of the breast for the same length of time. Electricity may be applied in this manner once a day for a period of four or five days; and usually it will be found that a single such séance will fill the breasts after the milk has disappeared for some days.

Among the other local therapeutic methods which have been used with varying success may be mentioned the application of warm poultices made of a weak mixture of mustard (not strong enough to burn) or of calabar bean, or of the leaves of the castor-oil plant. Gentle massage alone will often suffice to start the flow, or we may combine with it inunction of olive oil or of castor oil. Repeated applications of the breast pump and enveloping the breast with warm cloths are also very efficient methods.

The internal administration of drugs, for their galactagogue action, has not proved very satisfactory. *Jaborandi* will, it is true, increase the flow of milk, but its action is only temporary and cannot be depended upon when a prolonged effect is needed. It is best given in the form of the fluid extract of pilocarpus, in half-drachm doses; this preparation being less nauseating than the *jaborandi* itself. Or the effects of the drug may be obtained from hypodermatic injections of pilocarpine hydrochlorate, in gr. $\frac{1}{8}$ doses.

Physostigmine increases temporarily the flow of milk. So also do the preparations of ammonia—the carbonate and the acetate—when given in moderately large and continued doses. The alcoholic stimulants, such as ale, porter, and beer, and the malt preparations possess the power of increasing the quantity of milk secreted, but the quality is thereby deteriorated. To such a degree is this true that they should rarely be used except in small quantities. The volatile oils, especially the oil of anise, impart a pleasant flavor to the milk, and in consequence the child will be likely to draw much better. In this indirect manner they may serve to increase the flow of milk.

The most usual cause of defective lactation is anæmia. It is a well-known fact that the functional activity of an organ is directly proportional to the supply of blood furnished to that organ, and this is a very important law to remember when we are dealing with such a gland as the mammary. We may therefore expect to secure the greatest improvement in the secretion of milk from the taking of those substances and the adoption of those hygienic measures which tend to increase the supply of blood and to improve its nutritious qualities. The mother should be in the best possible condition before and after the arrival of the child, and this result should be secured by the administration of tonics, such as iron, arsenic, nux vomica, and quinine, and by the patient's taking proper food and exercise. The diet suitable for a nursing mother should be nutritious and easily digested. For the first few days of the puerperal period