

FORSTER (E.D.J.)

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AND
MUSHROOM-POISONING.

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MUSHROOMS AND MUSHROOM-POISONING.

If any apology were needed for the paper which I offer this morning, I think it will be found in the following extract from a newspaper of last summer :

TOADSTOOLS MISTAKEN FOR MUSHROOMS.—N * * *, N. Y., Aug. 13. A sad case of fatal poisoning by eating toadstools mistaken for mushrooms has occurred at N ** C ** , R * * * County, the unfortunate victim being Miss M * * * A. W * * , a highly respected lady twenty-five years of age. On Thursday last the W * * family ate dinner of what they supposed were mushrooms, gathered from the fields near by. Shortly afterward four members of the family were taken ill—two of the daughters, M * * and A * * being seriously affected. Yesterday, M * * died at noon, and her sister is still very sick. An investigation revealed the fact that the supposed mushrooms were poisonous toadstools, closely resembling the former in appearance.

This is a fair sample of what I have found each year since I became interested in the study of mushrooms.

“Do you know a mushroom?” “Certainly, I have eaten them often.” This answer generally refers to the canned ones, so often served with filet de bœuf, and which by the way resemble the fresh mushroom in flavor as much as hashed corned beef does a good porter house steak. “Oh, yes! a mushroom is a kind of toadstool.” Such are the replies generally given to my question.

“But do you know a mushroom when you are walking in the fields, and are you sure enough of your knowledge, that you dare to take one home, cook and eat it without fear of being poisoned?” I think not.

It is the purpose of this paper to endeavor to impart that knowledge, and warn you against those whose character is doubtful and those which are known to be fatally poisonous.

I am quite sure that there are not many of the members who can with certainty distinguish the edible from the poisonous varieties. Some of you know the common meadow mushroom, but here your knowledge generally ends; you cannot distinguish with certainty the poisonous Amanita, the most deadly of all the fungi, one of the most common in our northern woods, as well as one of the handsomest.

If called to a case of mushroom poisoning, I am very much afraid you would treat it upon general principles, forgetting, if you ever knew, that general principles are here of little avail, and that reliance should be placed upon an antidote which is as effectual here as when properly given in other cases of poisoning.

To help you to a knowledge of the common varieties which are edible beyond peradventure, to recognize the deadly Amanita, so that you may give it a wide berth, to treat properly a case of poisoning if you should be so unfortunate as to be called to one, will be my endeavor this morning.

From the dictionaries we derive the following definitions:

Worcester says a mushroom is a "fungous plant of the genus *Agaricus*. Mushrooms inhabit meadows, rocks and masses of decaying vegetable matter, in many parts of the temperate regions of the earth. Among them a large proportion are poisonous, a few are wholesome, but by far the greater number are unknown in regard to their action upon the human constitution. The name is in popular use often restricted to the edible species." And he says that "a toadstool is a mushroom."

Webster says of Mushroom, "(Fr. *mousseron*, the white mushroom, from *mousse*, moss, or the same root bearing the sense of softness or nap). The common name of numerous plants of the natural order of *Fungi*. Some of them are

esculent, others poisonous. Mushrooms grow on dunghills, and in moist rich ground, and often spring up in a short time. The term mushroom is sometimes applied to distinguish the edible fungi from the toadstools which are poisonous." Toadstool he defines, "(toad and stool). A mushroom, a plant which commonly grows in moist and rich grounds."

Such are the definitions of the dictionaries, but I think each person makes the distinction between mushrooms and toadstools or defines the words according to his knowledge of the subject.

Thus to the cryptogamic botanist, "mushrooms" include all fungi which have a cap and stem and resemble the common edible mushroom of the market in their general appearance, and to such "toadstools" would be a synonymous word if they used it.

To the mycophagist who is not a botanist, all fungi that he knows to be edible are mushrooms; all others having the cap and stem, of the qualities of which he is ignorant or which he knows to be poisonous, are very likely to be called toadstools,—the commonly accepted idea being that known edible varieties are mushrooms, all others toadstools. So it is that education in mycology increases the number of mushrooms and decreases the number of toadstools. To paraphrase an old saw,

"One man's mushroom is another man's toadstool."

As this name "toadstool" is founded upon a popular error, no one ever having seen a toad using a fungus for a stool, is it better to forego the use of the word, particularly as association of ideas plays so great a part in our likes and dislikes; for as toads are to many persons noisome and uncanny creatures, the disuse of the word will perhaps allow many, who otherwise would not, to eat of some of the most delicious of nature's products, upon which they formerly

looked with suspicion if not with fear,—“Products of which” Mr. Julius A. Palmer truly says, “the harvest is spontaneous, it requires no seed-time and asks for no peasant’s toil (a) feast, abundantly provided by nature for the poorest as well as the most epicurean.”

I shall only use the term mushroom, prefixing it with edible or poisonous as the case may be.

That some mushrooms are poisonous and even fatally so, no one can deny, but the danger from eating them when ordinary care is exercised is greatly over-estimated.

Stevenson, who has written one of the best and latest works on British fungi, enumerates as growing in Great Britain 1218 species of mushrooms, that is, fleshy fungi having a stem and cap.

We probably have a larger number in this country, where the study of mycology is yet in its infancy, and only portions of our territory have been thoroughly investigated.

Of this great number it is safe to say that the majority are harmless; very many are too small or too quickly perishable to be of use as food; many are known to be edible and only a few poisonous, although quite a number will cause distressing and alarming symptoms.

Mr. Palmer, of Boston, to whom we owe the first and as yet the only series of colored plates of edible and poisonous varieties issued in this country, and who has practically and personally tested the edible qualities of mushrooms as much as any one about here, acts upon the belief that the fatally poisonous varieties will all be found belonging to a single and quite easily recognized species, namely the *Amanitas*. Many others have the same opinion, but have hardly the courage of their convictions, and back them by their practice.

Besides the mushroom proper there are many others of the fungi which are edible and easily recognized; namely the Puff Balls, the *Clavarias* and the *Fistulina Hepatica*.

There are still others, including the Morels, of which I shall not have time to speak.

The Puff-Balls (fig. 1) are very easily recognized, being round and when ripe emitting their spores in the form of dust. These are good when fresh, before the inside has changed from the purest white; they can be sliced, cooked in batter, and are then delicious. These are called the omelette mushroom, on account of the resemblance in taste to



FIG. 1.

that dish. When eaten in proper condition, none are poisonous, although with some a slight cathartic action is produced.

The Clavarias (fig. 2) are quite common in woods and are readily known; they resemble a piece of branching coral in miniature. Stewed or cooked with butter, they make a good addition to any joint.

The *Fistulina Hepatica* (fig. 3), also known as the beefsteak mushroom, can hardly be mistaken. It is red in color; in shape it looks like a tongue, and grows on oak

and chestnut trees. It is not common. Prof. Farlow tells me that he found several last year, and doubted if I should know the difference from a beefsteak if I had eaten them after they had been cooked. I never found them until last season, and then they were too small for me to test their edible qualities.



FIG. 2.

A mushroom we will understand to be a fungus that has a stem and cap, *i. e.* umbrella-like in shape, and is not woody in texture.

Before proceeding farther in this necessarily somewhat cursory glance at our subject, it is best that we learn the meaning of a few botanical terms.

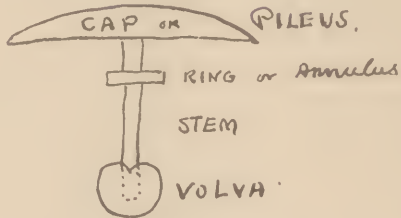
The cap or pileus is the expanded top, and rests upon the stem. The under side of this cap bears either gills, tubes or teeth. The gills are thin plates radiating from the centre, where the stem is joined to the cap. The tubes or pores are small holes, and give the under side a spongy appearance. The teeth are spines or bristles of different lengths. All these, gills, tubes and teeth, are covered by a thin membrane, which again is covered with the spores, which are the reproductive bodies and appear like fine dust when deposited upon anything lying under the cap. It has been



FIG. 3.

estimated that the number of spores in a single plant may exceed 10,000,000. Before the cap of the mushroom is fully expanded, the under side is covered by a membrane known as the veil; a portion of this is sometimes left upon the stem, and it then forms the annulus or ring; often this is movable. With some varieties the entire plant, before issuing from the ground, is enclosed in a membrane, portions of which remaining upon the cap, form warts, and a part remains about the base of the stem, forming a sheath or volva. This is very important, as the presence of these

warts and the volva is a guide to distinguish the deadly poisonous varieties.



Let us take up the first mushroom we find; we turn it over and see that the under side of the cap has teeth or spines; it therefore belongs to the genus *Hydnum* (fig. 4).



FIG. 4.

There are no poisonous species, but on account of the toughness and woody character of many, Dr. Badham says, "to eat must depend upon the united consent of the stomach and the teeth." The esculent variety is the *Hydnum repandum*, orange in color, two to five inches across, flesh white,

turning yellow when cut, spines pale yellow. There is no fungus with which this one is likely to be confounded; once seen, it is always remembered and may be gathered fearlessly.

We next find a mushroom with a spongy look underneath; this appearance is due to myriads of fine tubes; this satisfies us it is a *Boletus* (fig. 5), a family which contains



FIG. 5.

no members which are fatally poisonous. Vittadini says this "is not strictly the case, though many species hitherto reputed unwholesome, or worse, appear to lose their bad qualities by drying." Those having high-colored or red tubes have been considered poisonous, but no fatality is recorded. The mild-colored ones, with white, yellow or green tubes, if pleasant to the taste, are safe to eat, and sliced and fried in batter make a fair addition to our table.

This time our mushroom has neither teeth nor spines nor tubes, but has the radiating gills (fig. 6); we are approaching dangerous ground, for among these are many whose poison is fatal.

There is no rule by which the good can be distinguished from the bad; this should be strongly impressed on the mind. That the skin of the cap peels readily, that they change color when cut or are bruised, that they do not tarnish gold or silver with which they are boiled, that the stem comes readily out of the cap or grows at one side, and a dozen other reasons, are all equally fallacious; there is no such rule which has not its exception, and here an exception may mean death. Safety lies in knowledge,—positive knowledge. You should know positively the variety or varieties you venture to eat, and eschew all others.



FIG. 6.

You should fix firmly in your mind the characteristics of those you venture to eat, so firmly that you can pick them from a basketful of all kinds. You know the difference between a squash and a pumpkin, and would make no mistake in taking one for the other; but it might puzzle you to describe the salient points so that your cook, who had seen neither, would choose by your direction from the kitchen garden the proper vegetable for an old-fashioned pumpkin pie, and not bring a squash or possibly a bitter gourd. So

it is with a mushroom,—you must know it, and know it positively; when once learned there should be no more chance for a mistake than you would have in picking out a pumpkin.

The gill-bearing mushrooms belong to the family known as the Agaracini or Agarics; this is again divided into thirty or more genera, a division which concerns the botanist but to us is of no value. A division which is of practical use to us is one made by noticing the color of the spores; this can be seen by an examination of the gills with a lens, or better by removing the stem, placing the cap, gill downwards, on a piece of glass, and letting it remain over night, although in some cases an hour or so will answer. The spores will be found deposited on the glass, and will show the radiation of the gills. When several mushrooms grow together and overlap one another, the spores are often found on the caps of the under ones.

Classifying the Agarics by the color of the spores, we have the following divisions:—

- | | | | |
|------|--------------------------------------|---|---|
| I. | Leucospori, or white spored agarics. | | |
| II. | Hyporhodii, or pink | “ | “ |
| III. | Dermiini, or brown | “ | “ |
| IV. | Pratellæ, or purple | “ | “ |
| V. | Coprinarii, or black | “ | “ |

Among the leucospori, besides many others of which I shall not speak, will be found the following genera: *Agaricus*, *Lactarius*, *Russula*, *Cantharellus* and *Marasmius*, which contain both edible and poisonous species. The larger forms of these genera are rather easy of identification. *Agaricus* has three sub-genera which particularly demand our attention, namely *Amanita*, *Lepiota* and *Pleurotus*.

The *Amanitæ* are distinguished from all others in having warts upon the upper surface of the cap, a volva and usually a ring. While some varieties are edible and much sought for, others are highly poisonous. These are the handsomest

of our mushrooms, and are oftenest eaten by careless gatherers.

Notwithstanding the good character some varieties are given, a wise caution should prevent any but the experienced mycologist from essaying their edible qualities.

The *Lepiota* have one variety which can be mistaken for nothing else, the *Lepiota procerus* or Parasol Mushroom. It is found in lawns and open fields, grows to an enormous size, has a long stem and is easily recognized by the brownish scaly top, the ring which is movable, and the absence of a volva. The scaly top differs from the warty top of the *amanita*; the warts can easily be removed, not so the scales which are simply the cap itself ruffed up. *Pleurotus* has one variety easily recognized; it is found only growing upon the elm tree and is edible, but to my taste of poor flavor.

Lactarius is a genus known by the milky juice which exudes from the gills and from the cap and stem when broken. *Lactarius deliciosus*, or the Orange Milk Mushroom, is a highly esteemed variety. Badham says "there is but one fungus which in any way resembles, and as that one, *L. torminosus*, is acrid and poisonous, the gatherer must pay attention to the following characteristic difference between the two, namely that the milk of the *Lactarius deliciosus* is *red and subsequently turns green*, while that of *L. torminosus* is *white and unchangeable*."

The *Russulae* resemble very much the *Lactarii* except that they have no milky juice; they are easily remembered when once pointed out, by their extreme brittleness, stout spongy stem and dry texture. They have some of the best edible, and also some poisonous varieties.

If you are sure you have a *Russula* it may be eaten, if on trial of each specimen a piece of the stem is not acrid or unpleasant to the taste; this rule holds good for the *Lactarii*. These two genera are destitute of a ring. Can-

tharellus is a very easily known genus, the stem being confluent with the cap, the gills thick and swollen, resembling more the veins of a leaf than the usual gills. *Cantharellus cibarius* or the "Chanterelle" is a bright yellow throughout and has the odor of apricots; it is held in high esteem by fungus eaters.

While all the foregoing white spored mushrooms are fleshy and soon become putrescent, *Marasmius* differs from them all in that they wither in drought and revive when wet; they can be dried, and will keep for years, retaining all their good qualities, and when moistened they swell to their original size and are then ready for cooking. We have a very common variety which is esculent and easily recognized, viz. the *Marasmius Orcades* or Fairy Ring Champignon, also called the Scotch Bonnet. Its little buff head is seen on every lawn. It grows in segments of a circle, giving it its name of Fairy Ring. When once seen and carefully studied it should be mistaken for nothing else, although it is sometimes accompanied by those of about the same size, whose only resemblance is the buff color of the cap.

We have now glanced rather hastily at the white spored mushrooms. But while many are most excellent, many are so poisonous that my advice to the novice is to wait until he becomes a student of mycology, before eating any except the Parasol, the little Scotch Bonnet and the Elm Tree Mushroom, and then the chance of any mistake will be reduced to a minimum. I am confident that all fatal cases of poisoning have been caused by eating those with white gills and spores; this I think is shown by the tables of cases which I have collected. Among the pink and brown spored agarics, are some which are edible, but their qualities had best be tested only by the professed mycophagist. The purple spored agarics give us the two varieties which are so well known throughout the world and so highly esteemed for their edible qualities, namely the *Agaricus campestris* or Meadow

Mushroom and the *Agaricus arvensis* or Horse Mushroom. These so closely resemble one another that they are sold indiscriminately, and for the purpose we have in view they may be treated as one and the same. They are found in meadows, never in woods, their gills are of the most delicate flesh pink when they first appear above the ground, changing soon to a darker shade, finally becoming a dark purple almost black. The cap is dry, silky or downy, globular, with the margin united to the stem by the veil which soon becomes a ring about the stem, when the cap expands, the latter being bell-shaped at first and then almost flat. The stem is nearly solid, separates easily from the cap, and there is no volva.

It must be remembered that the volva is only found in the *Amanita* of the white spored and the *Volvaria* of the pink spored varieties, which latter we have not considered. The Pink Gill is the only species which is successfully propagated by man; vast quantities are raised in the caves about Paris; the young ones, *i.e.* with cap unexpanded, are the button mushrooms of commerce. Many are raised by the market gardeners about Boston.

It is believed by many that the Pink Gill is never found, except where cattle have been pastured, or the grass fertilized by their manure, the passage of the spores through their alimentary canal being in some way necessary for fertilization.

The Horse Mushroom sometimes grows to an enormous size; a specimen has been reported weighing fourteen pounds. These two, Pink Gill and the Horse Mushroom, are the only ones of the purple spored which had better be essayed, as other varieties are reported as causing symptoms affecting the nervous system. Of the black spored only those whose gills deliquesce into an inky fluid are considered as edible: of these there are several varieties; to one only shall I call your attention; it is so common and its charac-

teristics so well known that a mistake seems incredible. I refer to the *Coprinus comatus*, or Shaggy Mane Mushroom, known also as the Agaric of civilization, as it is found on dumps, dust heaps and about lawns on newly filled land. The cap or pileus is first oval and hard, the margin soon separates from the stem, leaving a ring, the margin quickly turns to a bluish black, and after expanding the whole plant dissolves into an inky fluid. The color is white to a brownish tint, the cap woolly or shaggy caused by the skin peeling and curling up in small sections; the stem is hollow. This used to grow, and perhaps does now, in profusion in the grounds of the Massachusetts General Hospital. I have found it in various parts of the city. It is used in all stages to make ketchup, but to stew or broil it should be taken before it begins to turn black.

The only mushrooms of the agaric family which I think you are safe in trying, are the Parasol, Elm Tree and Fairy Ring of the white spored; the Pink Gill of the purple spored; the Shaggy Mane of the black spored. But first be sure of your knowledge.

These five varieties of agarics, with the mild colored *Boleti*, the spiny *Hydnum*, the Puff Balls and the *Clavarias*, will give you sufficient variety of fungoid esculents, until such time as you become a student of mycology and a professed mycophagist.

Let us recapitulate by looking at the figures and the following tables:—

TABLE NO. 1.

NOT UMBRELLA FORM.	{ PUFF BALLS. CLAVARIAS. FISTULINA.	} EDIBLE.
UMBRELLA FORM.	{ SPINES OR TEETH=HYDNUM. TUBES OR PORES=BOLETI. GILLS=AGARICINI.	

TABLE No. 2.

AGARICINI.	{	LEUCOSPORI,	}	OR WHITE SPORED AGARICS.—SEE TABLE No. 3.	
		HYPORIODII,		}	NOT CONSIDERED.
		OR PINK “ “			
		DERMINI,		}	THE “ PINK GILL.”
		OR BROWN “ “			
PRATELLE,	}	THE “ SHAGGY MANE.”			
OR PURPLE “ “					
COPRINARI,	}				
OR BLACK “ “					

TABLE No. 3.

WHITE SPORES.	{	AGARICUS.	}	AMANITA—DEADLY POISON.
				LEPIOTA—THE “ PARASOL.”
				PLEUROTUS—THE “ ELM TREE.”
		LACTARIUS.	}	EATEN ON TASTE.
		RUSSULA		
		CANTHARELLUS.—THE “ CHANTARELLE.”		
		MARASMIUS.—THE “ FAIRY RING.”		

TABLE No. 4 [EDIBLE].

WITHOUT GILLS.	{	PUFF BALLS.	}	
		CLAVARIAS.		
		FISTULINA.		
		BOLETI.		
		HYDNUM REPANDUM.		
WITH GILLS.	{	THE “ PARASOL,”	}	WHITE SPORES.
		[LEPIOTA PROCEBUS.]		
		THE “ ELM TREE,”		
		[PLEUROTUS ULMARIUS].		
		THE “ FAIRY RING,”		
[MARASMIUS OREADES].				
		THE “ PINK GILL,”		
		[AGARICUS CAMPESTRIS].—PURPLE SPORES.		
		THE “ SHAGGY MANE,”		
		[COPRINUS COMATUS].—BLACK SPORES.		

TABLE No. 5.



THE DEADLY POISONOUS
AMANITA

HAS

{ WHITE GILLS.
WHITE SPORES.
WARTS ON CAP.
A RING.
A VOLVA.

The poisons of mushrooms may be as varied as the species from which they are derived, but the symptoms arising

therefrom can be classified under two heads: (*a*) those which occur soon after ingestion, within an hour or so, and (*b*) those whose appearance is retarded for eight to twelve hours. The early symptoms are those of an irritant to the alimentary canal, as vomiting, purging and the consequent exhaustion; and unless the quantity taken was excessive, or the taker debilitated, the after effects would not be serious, or at least not fatal: not so, however, if the symptoms come on later; here we have the effects of an irritant narcotic, purging and vomiting are followed by giddiness, vertigo, precordial distress, labored respiration, contracted pupils, coma and death,—the latter having occurred as early as thirty-six hours after the fatal repast. Most authorities agree that these more serious symptoms are only caused by the *Amanitas*, which you will remember as among those having white gills and spores. Some go so far as to state that it is only from these that fatal results have occurred.

To satisfy myself about this, I examined the literature of the subject, as found in the medical journals of this country, and have tabulated all the cases I could find recorded.

For ten years Mr. Palmer gave much time and study to mycophagy, and the results of his investigations he kindly placed at my disposal. He collected thirty-three cases, twenty-one of which were fatal. From other sources,—American medical journals, brother practitioners and the daily press,—I have forty-four cases, of which fourteen were fatal.

The tables are very unsatisfactory from their incompleteness, but are of value as bringing together, besides those collected by Mr. Palmer and the writer, all the cases occurring in this country which have been reported in the medical journals as noticed in the *Index Medicus*. Very many essential details are entirely omitted. By thus grouping the cases, the attention of practitioners will be called to these omissions, and future reports will perhaps be more carefully

made. The headings used are believed to cover all important points. They are :—

1. Number of case.
2. Name.
3. Date.
4. How cooked.
5. Description of plant.
6. Hour when eaten.
7. Taste.
8. Quantity eaten.
9. Symptoms began.
10. Description of first symptoms.
11. Description of later symptoms.
12. Treatment.
13. Result.
14. Length of illness.
15. Physician in attendance.

The writer will gratefully acknowledge reports of cases or references to the subject.

I will not detain you by reading the dry details of the tables I have prepared, but simply state that from my examination of the cases collected I am confident that the fatal ones were due to eating such as had white gills, or had other characteristics of or were known to be *Amanitas*. As the cases are mostly reported by those not versed in fungology, the descriptions are necessarily defective, but the mere statement that the under side of the mushroom was white leads me to infer that the fatal result was due to an *Amanita*, writers so generally agreeing that death is not caused by other varieties.

From a study of the cases where the symptoms developed after eight or twelve hours, and more than a very small amount of the fungus had been taken, the treatment by the usual methods of giving emetics, cathartics, astringents or stimulants, combined or alone, has I find been universally unsuccessful; but when the chief reliance has been placed upon atropia the results have been most brilliant. It is true

that I have the records of fatal cases where this drug had been given, but in such small doses (1-180 to 1-60 grain), that I was not surprised at the result.

The symptoms indicate a poison whose action is like that of morphia, and if it is to be combated successfully, the same treatment as used for an overdose of that drug must be given, namely atropia in full doses, one-third of a grain at a time for instance. One grain of atropia has been given in opium poisoning with success. I have treated at the Boston City Hospital and reported a case of poisoning by morphia, where I gave three-fourths of a grain of atropia, —one-half grain at once and one-quarter grain in ten minutes,—and saved the patient. Wharton and Stillé state that while one-sixth grain of atropia has caused alarming symptoms, death has not been caused by a grain; therefore I think that when we have present as powerful a poison as that found in the mushroom we had best use the antidote in moderately large doses.

The treatment by atropia is based upon the perfect antagonism which exists between this drug and the poison of the amanitas, which has been separated by Prof. Schmiedelberg and named muscarin. The poison has been separated by others and variously named, according to the variety from which it was obtained. The merest trace of this alkaloid will arrest the pulsation of a frog's heart, and even after four hours Lauder Brunton states he has caused it to pulsate again by a minute quantity of atropia being brought in contact with the organ. This and other experiments showing the antagonism between these two poisons, have been repeated by Prof. H. P. Bowditch at the Harvard Medical School. It acts as well upon mammals as upon frogs. My friend Dr. F. H. Williams, Assistant Professor of Therapeutics, tells me that he has recently brought the subject of mushroom poisoning and its proper treatment to the attention of his students in the Harvard Medical School.

In the treatment of such cases, general principles should only guide us to remove any of the poison remaining in the alimentary canal, by emetics and purgatives, to support the failing powers by proper stimulation. But the treatment should not stop here; our reliance must be upon an antidote; the poison already absorbed must be counteracted, an antidote must be used; and that antidote, I repeat, is atropia.

The course of treatment which has usually been followed in severe cases of mushroom poisoning has been as efficacious and successful, and based upon as scientific principles, as the answer to the statement said to have been made by a southern professor, who lecturing upon tannic acid, remarked: "And by the by, gentlemen, tannic acid is the antidote to the poison of the mushroom; can any of you explain its action?"

"T-t-th-think I can, professor."

"Well, sir, explain to the class the chemical re-actions that occur, and how tamin acts as an antidote to the poison of the poisonous mushroom."

"It f-f-forms the t-t-tannate of mush, and leaves room in the stomach!"

NOTE.—The tables of cases of poisoning collected by Mr. Palmer and the writer have been omitted in this reprint, as having slight general interest. They can be found, if desired, with the original article, published in Vol. XV., No. I., page 211. of the Medical Communications of the Massachusetts Medical Society.





