On the other hand, in the writings of Eberle I find the following incident related with remarkable honesty and candor: "A few years ago I attended a lady in a tedious and rather difficult labor. The child was still-born, but I nevertheless made some effort at resuscitation. I inflated the lungs in the usual way. The child, however, did not recover. A singular swelling just above the middle of the left clavicle induced me to examine it with the scalpel. The tumor extended into the thorax, in following which I opened the chest. On raising the sternum I found the superior portion of the left lung in a complete state of emphysema, and a good deal of air diffused under the anterior and lateral surface of the pulmonary pleura. With the exception of the inferior portions both lungs were crepitous, and appeared to have been well inflated. That the emphysema was the result of rupture of air cells, caused by the forcible inflation, and not of putrefactive decomposition, I could not doubt, for the child's motions were distinctly felt, both by the mother and myself, up to within two hours of the termination of labor."

(To be concluded.)

TOAD-STOOL POISONING.

BY JULIUS A. PALMER, JR., ESQ.

FOR several years I have devoted my leisure hours to the study of edible and poisonous fungi. I am in debt to members of the medical profession for valuable aid, as well as for reports of cases occurring in their practice. The following example of the operation of the poisonous alkaloid known as *amanitine* may interest your readers. It was not originally intended for publication, but is sent as noted in a book kept by the writer for the record of such cases.

On Tuesday, September 18, 1878, a gentleman called at my office and introduced himself as Mr. W., of Chelsea. After a little conversation, he said that he had been poisoned by toad-stools, became quite faint, and then stretched himself on my sofa. His face was very pale, almost a livid gray; its peculiar ashen shade was noticed by my wife from the opposite end of the hall. His story was that on Sunday evening he picked a quantity of white puff-balls, and also *one* other mushroom. This was a white-gilled, yellowish-topped specimen. The top had warts or scurf on it, and the stem a bulbous base, which latter he cut off, and cooked the remainder. He stewed this and the puff-balls in milk, with the usual seasoning. There was no burning or strange taste to the mushroom, either raw or after cooking. The stew was eaten by a family of five persons, no two of whom were affected exactly alike. The youngest, a boy of eight years, took about a dozen tastes on Sunday night, and ate about the same as the father on Monday morning.

Mon ay evening, twenty-four hours from first dose, his bowels were active ; otherwise no ill effects were felt. The stew acted simply as a generous but mild cathartic.

A daughter, a girl of eleven years, tasted a little on Sunday, and ate her portion for Monday's breakfast. She experienced during the forenoon a slight but very peculiar headache ; also some diarrhœa, and no other symptoms.

Another daughter, a girl of thirteen years, tasted it on Sunday night, and ate about the average on Monday. From nine to three, Monday, she had a peculiar, throbbing, severe headache ; no other sickness, no nausea, and no diarrhœa.

The mother scarcely tasted any on Sunday, but ate plentifully for breakfast on Monday. The milk left in which the fungus had been stewed, say two gills to a pint, Mrs. W. drank. In less than an hour it operated as a Seidlitz powder, producing the most violent diarrhœa, and (she says) seemed to pass right through her. She had a bad-feeling head for five hours, — not exactly a headache. Wednesday, a little of the same feeling in her head. Otherwise no ill effects.

Mr. W. ate a piece of the stem *raw* on Sunday night, and did not eat quite so much stew as the rest of the family on Monday morning. He felt nothing from the poison until Tuesday morning at one o'clock, or the night prior to his call on me, — say thirty hours after the first dose, seventeen hours after the full meal.

He was taken with colics and violent purging, and went to stool some four or five times in quick succession. When he saw me he was feeling weak, nauseated, with no appetite, and was very pallid. He had occasional pains which (from his description) I thought similar to those of bilious colic. I asked him if either whisky or olive oil was offensive to him when in health. On his answering "No," I gave him a table-spoonful of each mixed in one wineglass, which he took. Before he left the office he said he was feeling much better. He called again on Thursday, and said that he was at that time all right. Tuesday afternoon he had had two or three attacks of the same kind of colic, but so slight that he did not think them worth notice. Wednesday morning, or forty-eight hours after the full meal, he had a peculiar and violent headache, which went off about ten in the forenoon, since which he had felt well. He thought the family would let toad-stools alone in the future.

No remedial measures were used in either of the above instances, except the dose administered by the writer.

Comments on the above Case. — Mr. W.'s symptoms are exactly those of a person poisoned by amanitas eaten with food. The long period prior to attack and the severity of the poison absorbed, which remained in the system long after the fungus was expelled, make his a typical case, agreeing with others known to the writer.

It is not so easy to reconcile the experiences of his wife and children with the ordinary effects of the alkaloid known as amanitine or muscarine. The "tasting all round" Sunday night confuses matters, and forbids one to say how much was due to these small doses and how much to the full meal. But it seems to me that these points are worthy of notice : —

(1.) *Any* powerful drug taken in different proportions by those of widely distant ages and idiosyncrasies will produce varying results.

(2.) Mr. W. ate the fungus raw, and although he ate but little he is evidently very susceptible to the action of the alkaloid. Physical sensitiveness to the effects of tobacco and other narcotics varies widely in different constitutions.

(3.) The case is worse confused by the fact that the stew was of puff-ball, and the two elements remained (mixed) twelve hours before being eaten. The puff-balls contain an anæsthetic, of which little is known. When young, although the smell may be strong, — somewhat like valerian, — no fact in mycology is more certain than that they may be eaten with safety. When old, it is also certain that they have been burnt to stupefy bees ; further, that operations have been performed on patients under their influence.¹

(4.) Mrs. W.'s case, in comparison with that of her husband, is an excellent example of the theory that the more quickly amanitas acts the less serious the results. The longer the elapsed time from ingestion to operation, even if the fungus be expelled, the more of the alkaloid remains in the system.

(5.) The mushroom which poisoned these persons is very common in this State. I therefore append a description of it in general terms : The base of the stem, in entering the ground, has a wrapper incasing it more or less closely. To find this, let the fungus stand, and poke away with care the leaves and dirt around the stem. This stem has usually a collar or ring around it about two thirds of its length from the ground. The gills (or rays underneath the cap), as well as stem, are always pure white. The top of the cap is variable in color, according to the specific member of the genus. The most common variety has a yellow spot in the centre of the disk, shaded off to pure white at the edge. There are also varieties with red, golden, drab, greenish, and pure white skin for the top of the umbrella. But all have warts or scurf on this skin, which formation easily rubs off. Sometimes a specimen may be found where these warts are all gone, but near it may then be seen others just like it which have not lost this mark. By noticing these three marks, *wrapper* at the base, *collar* on stem, and *scurfy* top, per-

¹ See testimony of Dr. Richardson, as quoted by Dr. T. L. Phipson, in the *Popular Science Review* (British), 1863, vol. ii., page 26, as to the properties of *Lycoperdon giganteum*.

sons may avoid the most venomous family of mushrooms. To be sure, some esculent fungi will also be neglected, but this is far better than to eat a poison having no known antidote. The noxious principle is an alkaloid, producing all the symptoms of Asiatic cholera, and ending in delirium and death. Although known since the days of the Roman Empire, physicians have never been able to counteract its influence with any certainty, whites of eggs and the usual remedies proving utterly useless.

I have had several other cases reported to me which have not terminated so happily. Medical men would confer a favor and help to enlighten a dark subject by advising me of any parallel cases that may occur in their practice.

NO. 11 PEMBERTON SQUARE.

RECENT PROGRESS IN MEDICAL CHEMISTRY.¹

BY WILLIAM B. HILLS, M. D.

TOXICOLOGY.

Conversion of Calomel into Corrosive Sublimate. — Two cases have been observed, presenting all the characters of corrosive sublimate poisoning, after the use of powders composed of calomel and sugar, which had been prepared for some time. As it was possible that the corrosive sublimate in these cases was formed from the calomel by the action of the sugar or some substance contained in it as an impurity, many experiments have been made in order to discover the conditions under which the mercurous is converted into the mercuric compound. Herr Slop² finds as the results of his experiments that corrosive sublimate is formed in the presence of hydrochloric acid, organic acids, chlorides of the alkalies, and carbonates of the alkaline earths, the last being specially important on account of the frequency with which calomel is dispensed with magnesia. On examining several specimens of calomel pastilles, having sugar for their basis, and which had been made more than a month, he found some to contain a considerable quantity of corrosive sublimate, while others did not show a trace. He attributes these differences to the fact that the latter had been prepared with a neutral refined sugar, while for the former raw sugars, which are often acid (colonial sugar) or alkaline (beet-root sugar), on account of the hydrate of lime which they contain, introduced in the neutralization and clearing of the juice, had been employed. He thinks that it is by the action of these impurities on the calomel that the corrosive sublimate is formed.

Mr. Langbeck³ doubts whether well-washed calomel mixed with per-

¹ Concluded from page 270.

² The Dublin Journal of Medical Sciences, March, 1879, page 233, from the Pharm Journal, August 31, 1878.

³ Ibid.