citement returned, and she would then pass the day in repeating the same expressions. This state continued for about a month, during which time she frequently refused to take food, declaring that she was unable to swallow; so that she was reduced to a state of great emaciation. Then she became quiet and comparatively calm, but still very uneasy and distressed in mind. For the first time, she complained of pain, all over her body. Her tongue was parched and dark brown; her pulse rapid and extremely feeble. After remaining for about a week in this condition, she gradually and quietly sank.

Post Mortem Examination Forty Hours after Death.—April 15th, Weather not warm. Along each side of the falx cerebri, the membranes were closely adherent to each other, and firmly attached to the side of the falx and to the skull a little beyond it. The entire brain was very small and particularly globular in shape. The veins on its surface were full of dark-coloured blood, and several large clots were found in the longitudinal sinus. Beneath the arachnoid, a quantity of fluid was found in the sulci between the convolutions, which in some places were extremely atrophied. At the vertex, over a somewhat circular area of about an inch and a half in diameter, on each side of the longitudinal fissure, the convolutions were so atrophied, that the spaces between them were in some instances three quarters of an inch in breadth. It was over this space that the membranes were adherent to each other, as well as to the falx and skull. The quantity of fluid which ran out from beneath the arachnoid was about two ounces and a half. The substance of the hemispheres was not at all soft. When sliced, the grey portion presented its normal colour and consistence, and was not unusually vascular. The lateral ventricle contained a small quantity of fluid. The right optic thalamus was decidedly smaller than the left, and somewhat soft. The corpus striatum on the left side was decidedly small, soft, and altered in shape, being bent, as it were, upon itself. The pons and medulla oblongata were very small.

REPORT ON THE SUPPOSED PRESENCE OF LEAD IN AERATED WATER FROM SYPHON-BOTTLES.

By JOHN ATTFIELD, F.C.S.,

Professor of Practical Chemistry to the Pharmaceutical Society of Great Britain, etc.

IN a recent number of the BRITISH MEDICAL JOURNAL there appeared a letter, dated February 9th, 1874, and signed "M.D., F.R.S.," drawing attention to an examination of eight bottles of aerated water, each of which was stated to contain lead. The writer thought that the results of the examination should be made known to the medical profession and the public, he regarding such aerated water as a source of poisoning by lead. The Editor of the JOURNAL, commenting on the letter, suggested that, although the evidence as regards the presence of lead was strong, the metal was probably not present in all syphon-bottles of aerated water; thereupon the manufacturers of the metal fittings of such syphon-bottles (Messrs. Hayward, Tyler, and Co.) desired me to make an extended investigation of the subject, the results of which investigation I now describe.

Several specimens of aerated water taken out of syphon-bottles, of which some had been filled in London and others in the country, were first tested for metals generally—that is, not only for poisonous metals such as lead, but for iron and tin, metals of which cooking utensils and other vessels are made or lined, and minute amounts of which find their way occasionally into articles of food or drink, without, as is well known, doing the slightest harm to persons partaking of such food or drink. This preliminary testing showed, when the experiments were very carefully performed, that most of the specimens did contain a trace of a metal of some kind, but in such extremely minute quantity, that, whether harmful or harmless, could not be ascertained without further operations on large quantities of the water. About half a gallon of aerated soda-water was therefore made the subject of a single experiment. The still extremely slight amount of metal thus obtained was *not lead*; and further tedious experiments had to be conducted before its real nature could be definitively decided: *it was tin*.

While the experiments just mentioned were progressing, the water with which some of the specimens of aerated liquid were made was tested for lead or tin. Not a trace of either was present. The small metal ferrule in the syphon-bottles, with which ferrule alone is the aerated water in contact while in the bottles, was also analysed. It proved to be pure tin. The metal tap or valve forming the head of syphon-bottles was next subjected to examination. The aerated water is only in contact with this tap when the liquid is allowed to flow out into a drinking-glass, and therefore would not be likely to impart metallic impurity to the water; still, it is conceivable that by a culpable act of carelessness a tap might be so placed as to become corroded, and afterwards, without

being cleaned, be screwed on to a syphon-bottle. Neither of the taps that came under my notice gave any indication of ever having been so corroded. One tap, which had evidently been much used, was next carefully divided by a fine saw, and the whole interior thus exposed. Thorough scrutiny, by aid of a microscope, detected minute portions of a white powder adhering to the inner walls of the tap. Analysis of this incrustation showed it to be ordinary calcareous matter, such as commonly occurs in kettles and kitchen-boilers, and which is a common constituent of water used for drinking purposes. The tap itself proved to be pewter, the material of which metal drinking-vessels, such as publicans' pots, are made.

1. Some tin ferrules were placed in pure distilled water, in water containing the aerating gas, and in aerated water containing the carbonated alkali, generally present in aerated alkaline waters. Each of these liquids dissolved a trace of tin from the ferrules.

2. Into each of the three liquids named a tap was placed. Only in the distilled water was any metal from the pewter detected, showing that the aerated water of syphon-bottles cannot dissolve any of the pewter of the tap through which it flows when the vessel is in use.

3. A pewter tap, coated with silver inside and out, did not yield a trace of metal to either of the three liquids.

4. The three metals mentioned were exposed in the three liquids mentioned for one day and then tested, for two days and then tested, and for three days and finally tested. The results were as already indicated; namely, that only the harmless metal, tin, is slightly, very slightly, attacked by aerated waters—a trace, an insignificant trace, of the tin going into solution. A man would have to drink many glasses of such aerated water before he would have taken even a medicinal dose of a soluble compound of tin.

Conclusions.—1. The aerated waters of either corked bottles or syphon-bottles cannot, except by accident, contain lead. 2. Aerated waters in corked bottles may possibly contain in solution a trace of tin, derived from the manufacturer's mixing vessels—an amount smaller than that frequently found in food cooked in tinned saucepans. 3. Aerated water kept in syphon-bottles is likely to contain a trace of tin. 4. Makers of aerated waters may exclude even a trace of tin from the waters, not only by using manufacturing vessels silvered inside—a plan already extensively adopted—but also by silvering the tin ferrules of their syphon-bottles.

TEMPERATURE AS AN ASSISTANCE TO DIAGNOSIS IN SOME CASES OF ENCEPHALITIS.

By E. CHARLTON FOX, M.D., Redditch.

ON account of the difficulty of always accurately distinguishing between inflammation of the substance of the brain and inflammation of its membranes, and also because I believe that few cases of meningitis occur in which the brain itself is not, to some extent, implicated, I have, in these notes, used the term "encephalitis" in preference to "meningitis". Two years ago, while attending, in a large manufacturing town, a case of encephalitis (Mrs. B., aged 28), in which I took carefully the morning and evening temperature, I observed that the morning temperature was always higher than that in the evening. The following is the record of the case.

	Morning.			Evening.		
1st day	...	...	...	99.4 Fahr.	99.4	Fahr.
2nd "	...	...	99.8 Fahr.	99.0	99.0	"
3rd "	...	...	99.4	99.0	99.0	"
4th "	...	...	100	99.4	99.4	"
5th "	...	...	100.4	99.5	99.5	"
6th "	...	...	99.9	99.1	99.1	"
7th "	...	...	99.9	99.2	99.2	"
8th "	...	...	100.2	99.5	99.5	"
9th "	...	...	99.5	99.8	99.8	"
10th "	...	...	99.7	—	—	"
11th "	...	...	—	99.0	99.0	"
12th "	...	...	99.4	—	—	"
13th "	...	...	98.5	—	—	"

Convalescence was now established.

It struck me that if this rule were constant, it would afford a valuable assistance in the diagnosis of the early stages of encephalitis, in which, as the following case shows, a combination of circumstances and symptoms may lead to erroneous conclusions.

Shortly after the occurrence of the case of Mrs. B., I was called to see a little girl, aged 13, "in a fit". Her mother said that a few weeks before she had had a slight one. From her age and appearance I imagined that the fits were hysterical, and caused by uterine disturbance; but the appropriate remedies for such a case did no good, and the cerebral disturbance grew worse. One morning, calling to see her,