the cerebral functions; delirium is wanting, though headache may exist. With great debility are found the symptoms, rational and physical, of pneumonia. Petechiæ occur. Opisthotonos is not unusually met with. Only two cases of this form occurred among those recorded; both recovered, both exhibited petechiæ. In one case with the cerebral symptoms pneumonia occurred on the fourteenth or fifteenth day, caused by accidental exposure. In the *Boston Medical and Surgical Journal*, vol. 72, p. 372, is the following in a letter by Dr. J. W. Goodell, upon this disease. "We have had some twenty cases of pneumonia since Jan. 1st, and most of them strongly typhoid; in fact, such a lot of black tongues I have never seen in real typhoid fever." May not these cases have belonged to this second variety?

III.—The third variety is marked by an absence of all the peculiar local symptoms; having the debility, the petechiæ and complications. Two cases occurred, one with suppuration of both parotids, the other with great swelling and excessive tenderness of the right knee; both were without cerebral symptoms; both recovered.

Though these last two varieties have been so seldom observed during late years, they were more frequent during former epidemics, especially the pneumonic form; formerly also sore throat was frequently a symptom of the third variety.

[To be continued.]

COLLODION.*

[Read before the Norfolk (Mass.) District Medical Society, July 11, 1866, by JOHN P. MAYNARD, M.D., of Dedham.]

MY excuse for trespassing a few moments on the short time allotted to our meeting, is in the repeated solicitation that I should condense in a brief paper some remarks upon collodion.

I cannot hope to afford any fresh information on this subject, as its novelty has long since passed away—it being now nearly twenty years since I first introduced it to the profession as a new material for dressing wounds. I was induced to apply it for this purpose from observing the effect of a specimen of gun cotton dissolved in ether, according to the formula of Prof. Schönbein, of Europe, with which I was experimenting to obtain a varnish which would prove impervious to water. Finding it possessed, when applied to the skin, considerable tenacity, it was a very natural inference that it might be made available in surgery; especially if by some variation in Schönbein's formula a still more tenacious solution could be attained, for many specimens of gun cotton then made were but partially soluble. After many experiments I succeeded in obtaining a material adapted to the desired purpose, known by the name of collodion.

* From *Κολλώδης*, gluey; a name given by Dr. A. A. Gould, of Boston.

This was distributed among surgeons, who confirmed my favorable opinion and experience of its advantages for surgical purposes. At the request of the late Dr. John D. Fisher, of Boston, a paper was furnished him on the subject, which was read before the Boston Society for Medical Improvement. This was followed by a series of articles published in the *Boston Medical and Surgical Journal*, giving a more detailed statement of some of the more important cases in which I had used it during the year 1847. These were the first cases, as far as I am aware, in which collodion was used for surgical purposes.

Since that period it has come into general use, both in this country and Europe. Erasmus Wilson, of England, to whom I forwarded specimens, with an account of my experience in its use, soon after published his commendations of its utility in diseases of the skin, wherein he expresses the opinion that "collodion is likely to occupy an important place among the adjuvantia of surgical practice."* However beneficial it may be in these diseases, my own experience leads me to the belief that it is best adapted to the following purposes.

Incised Wounds.—In those of a limited extent, the immediate application of collodion to the edges of the lips of the wound after being brought into perfect apposition. In those of larger extent by the mediate application of strips of cotton cloth moistened with the collodion. No sutures can possibly keep the edges of an extensive wound in such perfect and permanent union as the collodion thus applied. I have thus used it advantageously in wounds from an inch in length to those of thigh amputations; and almost universally secure union by the first intention.

Harelip.—Owing to the excessive tenacity with which it adheres to the skin I have found it of great service in the operation for harelip, by attaching strips of cloth moistened with it across the lip to each side of the cheeks, rendering all liability to separation of the wound impossible.

Next comes its application to *burns*; in these cases, painted over the surface of the inflamed skin it seems to afford instant relief, effectually preventing the admission of air, supplying an artificial cuticle beneath which the process of reparation by nature is undisturbed.

Among many other purposes to which I have applied it, may be mentioned the removal of *small erectile tumors*, such as *nævi materni*. I have frequently succeeded in removing these unsightly disfigurements in children where an operation was undesirable. Its repeated application every few days will be found to restore these patches of engorged bloodvessels to their natural color, by its permanent contraction of their contents. I take pleasure in stating that Dr. Brainard, of Illinois, has met with similar success, an account of which was published in the *North Western Journal* some years ago.

* For a more minute account of his application of it, reference may be made to the *London Lancet*, Nov. 18, 1848.

In *bed sores*, so frequently resulting from long confinement in the horizontal position, I have found collodion to be of great efficacy in protecting the exposed prominences of the emaciated body from painful pressure and preventing the integuments from excoriation. The first case in which I thus used it was that of a young female in the last stages of phthisis, long compelled to remain in a recumbent position, where portions of the hip-bone gave evidence of the result of constant pressure. The collodion was painted over the sensitive skin until a thick coating was produced, which entirely removed all pain and prevented any subsequent tenderness.

By this means the surgeon may at once relieve the *pain in the heel* so common from pressure, in fractures of the leg; in *hernia*, from too strong pressure of a truss. An *aneurism* may be thus coated before its cure is attempted by long-continued pressure. In the tenderness of recently healed *stumps*, where artificial limbs are worn, its application has been found very useful.

Another purpose to which it may be applied is to prevent the pitting of *smallpox*. In this disease I have coated the entire face with it, occasionally renewing it if needed, with the satisfaction of finding, after recovery, when the collodion peeled off, the patient's face perfectly smooth and free from any scar.

In *erysipelas*, I have found it useful in allaying the burning sensation which accompanies the disease—but have not found that it would arrest the progress of the disease or limit the duration of the eruption, which will ordinarily disappear in a week or ten days without treatment. I allude to this, as some physicians have lauded its effects too highly, inferring that they had shortened the disease by its application because the disease disappeared a week after. Surely their cases were instances of coincidence, rather than sequence.

One more surgical use that I have availed myself of, is as an *immovable bandage* in fractures, instead of the ordinary starch bandage—its advantage being in the quickness of its conversion into a firm support for the fractured limb, owing to the rapidity of the evaporation of the ether holding the gum in solution.

The above-mentioned surgical purposes are those to which I have deemed collodion best adapted. What further applications may be made of this material, time only can show. It has already entered the domain of art, and by its aid the photographer furnishes us with those artistic productions that rival the engraver's skill. First came the thin layer of collodion, poured over the surface of glass, called the ambrotype—a vast improvement over the ghastly looking daguerreotype. Now comes the still more beautiful photograph on collodionated paper. Thus has chemistry aided art, as well as surgery, by its curious and peculiar properties, which may yet be adapted to some object of more importance than any yet developed.

Before concluding this imperfect sketch of the origin, nature and uses of collodion, I cannot avoid alluding to a highly improper and

absurd application made of this substance, by coating pills with it to conceal their taste. M. Sourresseau and Mr. Durden have thus used it, either ignorant or forgetful of the fact that it is insoluble in the gastric juice or the intestinal secretions. They might have swallowed with impunity their pills thus coated, and by a careful after search have found them in as good condition, as regards their solvency, as when they were first sent on their fruitless journey. If any have administered pills thus coated and rendered more insoluble than shot, it will be needless to add that any improvement in health which may have followed must be regarded as additional instances of the error of attributing recovery to treatment rather than to nature.

Before closing, it may be pertinent to mention the formula best adapted for surgical purposes. As before stated, in my earliest applications of this substance I used a solution of gun cotton, prepared according to the method of Schönbein. Larger experience and various experiments convinced me a material better adapted to fulfil the wants of surgery could be obtained by departing from the object of obtaining a solely explosive compound, and substituting one that would be completely soluble. I avail myself of this occasion to repudiate the formula purporting to be mine, published in the U. S. Dispensary, by Wood & Bache, which is unauthorized and incorrect. The true formula, which I have always communicated verbally to any in the profession who have desired it, is the following:

Take two parts of sulph. acid, sp. gr. 1.850, and one part nitric acid, sp. gr. 1.450. Mix them — allow the temperature to fall to about 100 Fahrenheit. Add to this, raw cotton, to point of saturation. Let it soak about one to two hours. Pour off the acids. Wash the cotton till litmus paper shows all acidity removed. Dry thoroughly. The cotton will now be found to be converted into a gum, completely soluble in ether of about .750 sp. gr., or in pure ether 3 parts and alcohol 95 per cent. 1 part. About 2 ounces of cotton thus prepared will make about one pint of collodion of proper consistency for surgical purposes. For photographic objects, a less amount will be sufficient. The conditions for success by this formula are simply precision in the details and careful manipulation, which a little experience will perfect.

Reports of Medical Societies.

MAINE MEDICAL ASSOCIATION.

AMIDST the excitement attendant upon the fearful calamity which visited our city on the 4th inst., we have failed to report for your valuable JOURNAL the doings of the Maine Medical Association, which held its session in Portland commencing June 19th, and continuing three days.

This session was one of unusual interest, both from the large at-