

between acute and chronic cases. This method is unsatisfactory and unscientific, but the most practicable one available. By general consent, twelve months has come to be regarded as that limit, a standard based upon the average duration of recovered cases as computed from hospital statistics. This practically makes the terms "acute," "curable," and "recent" synonymous, as distinguished from "chronic" and "uncurable" insanity.

But all asylum physicians do not hold the same opinion, some placing the limit as low as six months for curable cases. There is consequently a wide variation occasionally met with when an estimate is to be made of the number of acute and chronic cases in a given collection of insane persons. For example, in reply to a recent inquiry, made with reference to a possible separate provision for the acute insane of the city of Boston, it was found that of 1,170, the entire number of insane patients of all classes supported by that city at her own institutions and at the lunatic hospitals of the State,<sup>7</sup> but 30, or 2.5 per cent., were of the acute class. This is at variance with the usual rough estimate or guess, of about six or seven per cent., which is none too large an estimate, as is indicated by the fact that the proportion of all the acute cases (mania, melancholia, dementia) to the entire number of patients of all classes remaining in all the State hospitals for insane of Pennsylvania at the end of the years 1890, '91, '92, '93, '94 and '95, ranged from 6.8 per cent. to 12.3 per cent., in an average of 6,207 patients.<sup>8</sup> Also, of 62,431, the entire number of lunatics remaining in 1890<sup>9</sup> in all the English asylums, 4,070, or 6.5 per cent., were reported as presumably curable.

Even the duration-limit of a year is too low, and works harm. It is scientifically inaccurate on its face, from the fact that the duration of a person's insanity is almost invariably understated by relatives. But even accepting twelve months as the correct average duration, quite a large number recover in a greater length of time. From the table in twenty-five annual reports since 1891, of five Massachusetts lunatic hospitals, which gives the whole duration of mental disease (exclusive of previous attacks) in the recovered cases, it appears, that, of 1,469 recoveries of known duration, *twenty-one per cent.* occurred after a duration of more than one year and (for the most part) under three years.

This artificial standard of duration, therefore, cannot fail to frequently consign curable cases to the limbo of the chronic class, and thus deprive them of the special care and attention which they demand and which may be essential for recovery. Patients who are thus prematurely labelled "chronic" are often removed from the State Hospitals, with all the advantages there to be had in the way of nursing and skilled medical attendance and supervision, to the town almshouse where they have little or no care, if they are not actually neglected or abused. In private cases also, by reason of the general acceptance of this standard as the limit of the acute condition, changes of treatment are often precipitated which are preju-

dicial to the best interests of patients. It often happens that a patient who is being treated privately away from home is prematurely pronounced a chronic case and hopelessly insane, when a little longer delay might have resulted in cure, and spared him the stigma which unfortunately and absurdly attaches to those who have been committed to an institution. Finally, it is not improbable that too rigid adherence to the twelve-month duration-limit is in a measure responsible for the lack of that great desideratum: separate hospital accommodation for the acute cases, by reason of the fact that it is thus made to appear that too small a proportion of patients would be available to make special and separate construction advisable.

Is it not, then, far more humane to take the small risk of treating a few chronic cases as though they were acute and curable by including in the "acute" category all whose insanity has had a duration of at least one and a half years, than to deprive a fairly large number of curable cases of the benefit of special care and treatment?

## Clinical Department.

### A HOMICIDAL DEATH FROM SULPHATE OF STRYCHNINE.

BY EDWIN J. BARTLETT, M.D., HANOVER, N. H.

ON the 9th of March, 1895, John E. Holloway, of Glover, Vt., was found dead in one of the out-buildings of a dwelling-house in which a dance was going on. The circumstances aroused suspicion of poison; analysis disclosed strychnine. Mrs. Holloway and one William Chase were tried at Newport in the fall of 1895 and the winter of 1896. Mrs. Holloway was acquitted, and Chase was convicted.

Though many desirable details failed to come to light, there are some matters of interest in the case.

The poison was administered in alcohol. Near the scene of the crime a pint whiskey-flask was picked up; there were others, but this one contained one teaspoonful of dilute alcohol and three grains of undissolved crystals of strychnine sulphate. The alcohol when examined by the chemist held 15.2 milligrammes in one centimetre, or about one grain in a teaspoonful. Experiments in the laboratory to gain some idea of the rapidity with which solution could have been effected showed with no shaking (except momentary stirring at the end of the period to secure a uniform sample) 4.5 milligrammes per centimetre, or one grain in four teaspoonfuls, were in solution in fifteen minutes. This and several other experiments proved that there could have been no difficulty in dissolving an ample dose between drinks.

The clinical history is incomplete; the poisoning, sickness and death were all between one and three o'clock in the morning, but how much within those limits cannot be stated with any certainty. It is a reasonable conjecture that the case did not occupy more than three-quarters of an hour from beginning to end. Holloway was seen among the guests who were eating supper between twelve and one. He was seen outside the house in good condition about one. Between one and two he was sitting upon the stairs in the out-building "very sick to his stomach." He talked intelligently, suggested a doctor, then advised waiting, as he might soon feel better. This occupied

<sup>7</sup> Austin and Pierce Farms in Boston, the State Lunatic Hospitals at Northampton, Worcester, Taunton, Danvers and Westboro, the Worcester Asylum for Chronic Insane and the State Almshouse at Tewksbury. No criminal insane, inebriates or feeble-minded are included.

<sup>8</sup> Reports of Committee on Lunacy, of the Board of Lunacy and Charity of the State of Pennsylvania.

<sup>9</sup> Report of Commissioners in Lunacy, of England.

"about twenty minutes"; suddenly "he fell right back, kicked a little and stopped breathing." Apparently death was caused by the effect of the first convulsion upon the muscles of respiration.

The interval between the time of the death and three o'clock is not satisfactorily accounted for.

The first witness as to post-mortem condition who was entirely clear of any motives for reserve saw the body about three o'clock; the head was on the stairs supported by a butter-tub cover, and the heels were on the floor; the body was arched and rigid as iron, the arms were rigid and extended, the hands cold and clenched and the facial muscles contracted to a grin. When the physicians examined the body at two o'clock in the afternoon, one of them passed his hand between the arched back and any possible support; it rested entirely upon the heels and the head, and when they lifted it it stood upright with a little balancing. An emission of semen had taken place.

The autopsy disclosed no marks of violence. The lungs were congested. The heart contained moderate clots. A tumor, the size of a walnut, was found on the upper surface of the brain, just beneath the dura mater, near the longitudinal fissure, and about midway from before backwards. (This tumor was urged as a cause of death by the defence.) The stomach and heart, in separate jars, were delivered to the chemist for analysis. The interior of the stomach was pinkish, smooth, and normal to inspection. Its contents were ten centimetres (one-third ounce) of colorless, viscid fluid of an alcoholic odor, and two pieces of apple, one of which contained part of the core; no particles of food or other solid matter were present. It was in evidence that the deceased ate supper between twelve and one o'clock; there was, however, no history or sign of vomiting, and no one was able to tell what he ate.

The strychnine obtained was white and imperfectly crystalline; the fractions actually weighed amounted to 3.8 milligrammes of the alkaloid, giving a total of 11.6 milligrammes (two-elevenths of a grain) in the stomach contents. The taste, physical properties, chemical reactions and physiological action were completely identifying. The color reactions were strong and satisfactory with 1.0075 milligrammes (about  $\frac{1}{8000}$  of a grain) of the residue. A frog weighing five grammes given by the stomach .045 grammes ( $\frac{1}{500}$  of a grain) showed muscular twitching in ten minutes, followed at once by distinct but not strong spasms for ten minutes, at the end of which period he was apparently dead; another frog weighing fifteen grammes was given the diluted remnant of the first frog's dose — certainly not more than  $\frac{1}{15000}$  grain. In five minutes there were indications of the action of the poison; and in twenty minutes exceedingly powerful tetanic convulsions; their onset was accompanied with a croaking sound, and at their maximum the frog was like a tensely strung bow. After twenty-eight hours, during which the least jar or touch or breath was the occasion of a convulsion, the frog recovered.

Later, four and one-half months after death, an attempt was made to recover absorbed strychnine from the heart, which was then in a putrid condition. Forty-two centimetres of fluid were drained from it and worked through, chloroform being used as the final extractive. Thirty drops of the chloroform, evaporated in small space, left a decidedly bitter residue;

this was repeated three times. The fading purple reactions, distinct though fleeting, were obtained from evaporation of four drops, and upward, of chloroform in the same spot, but not from the evaporation of one, two or three drops. This was repeated eight times. One-third of the remaining material, after evaporation, was given to each of two frogs weighing four and five grammes; In fifteen and in eighteen minutes the frogs manifested discomfort and loss of muscular control — the hind legs tended to straighten out; but there were no convulsions. In the course of an hour and a half the frogs resumed their usual condition. The next day the same frogs were taken: to one was given all that was left of the material, and to the other nothing; the dosed frog acted as on the previous day, while the other remained as usual. At the trial no stress was laid upon these results from the heart; the facts were stated with the voluntary comment, that by themselves they were not conclusive of the presence of strychnine. On further consideration, they seem, though tenuous and difficult to maintain, to justify a more positive statement.

The carefully conducted trials of this case, though affording nothing of special importance to the medical or chemical witness, furnished a rather striking combination of what may be styled accidents of the law. At the close of the first trial, after a verdict had been rendered convicting one respondent and acquitting the other, it was brought to light that a jurymen had been disqualified from the outset; the acquitted respondent was released, the convicted one was granted a new trial, and the jurymen was convicted of perjury. It was thus made practicable — though it did not happen — for the released respondent of the earlier trial to take, as witness in the later, entire responsibility for the crime without legal penalty.

At the second trial, the jury, at first unable to agree, finally brought in the verdict of manslaughter.

An exception carried to the Supreme Court established as the law of evidence in Vermont, that "adulterous relations with wife may be shown as motive for murder of husband."

## Reports of Societies.

### BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

JAMES G. MUMFORD, SECRETARY.

REGULAR meeting Monday, February 8, 1897, Dr. A. L. MASON in the chair.

DR. CHARLES H. WILLIAMS read a paper entitled, STANDARDS OF FORM AND COLOR-VISION IN RAILWAY SERVICE.<sup>1</sup>

DR. B. JOY JEFFRIES: The paper is interesting to me because just twenty years ago next month I first brought the question of defective form and color sense before the public. I had been at work upon it a year or two before, and then insisted on the necessity of having definite standards fixed, to be carried out by competent experts, both on the railroads, in the merchant marine and in the army and navy, and also the necessity of an international commission to settle on such standards and the carrying out of them; therefore, I entirely agree with all that Dr. Williams said

<sup>1</sup> See page 561 of the Journal.