tion in these cases, yet in the counties of Cumberland and Westmoreland much intermarriage has taken place, and during the year 1873 hereditary predisposition was known to exist in 42 per cent. of the cases admitted. In both these cases the mental state was almost identical both as to the primary symptoms and also as to the progress of the case. Great depression, suicidal longings, feelings of abdominal discomfort, and costiveness were the prominent symptoms.

In J. W.'s case the stricture of the large intestine appears to me fully to account for the mental phenomena; and in the case of T. W., the occlusion of the bile duct stopping the supply of bile to the intestines, and thus defrauding them of their natural stimulus, and also causing a certain amount of blood poisoning, seems to me an ample cause for an attack of melancholia. No doubt the patients were both advanced in years, which rendered them more liable to be affected mentally by their physical state. As to the visceral lesions, the stricture of the large intestine was in all probability the result of a dysenteric ulcer.

The occlusion of the bile duct was probably the result of some acute inflammatory mischief, but as most of the relatives and friends of both these patients were dead, or have left the locality in which they lived, I have been unable to get an account of their former bodily health, or a history of any former illness.

Nitrite of Amyl in Epilepsy. By James A. Philip, M.B., Assistant Medical Officer, County Asylum, Gloucester.

The following notes of my experience of this drug may be interesting:—

It was tried in several cases, all epileptics of some standing, and in doses varying from 3 to 20 drops.

At first a chloroform inhaler was used, but an oil-silk cone, with blotting paper inside, was found more convenient. Three male epileptics inhaled twice a day, for about six weeks, beginning with three drops and rising gradually to 20 drops. In none of these cases did any benefit result.

In several other cases nitrite of amyl was used. I may mention the following:—

A male patient had a fit during the night, four before 11 a.m., an inhalation of amyl at 11 o'clock, and another fit at 3.30 p.m.

In a second case the fits were somewhat peculiar. He first uttered a humming noise, then began to run and jump about, shouting all the time and taking no notice of anyone. He soon fell down, and was convulsed for a short time, after which he soon began to return to his usual state.

He inhaled 5 drops, whilst standing with his head down, and wearing a confused, sullen expression. Pulsation of the carotids, &c., followed, and a sensation of sickness, which warned him of an approaching fit, passed off. However, in three minutes after, he had a fit of the usual character. He had several fits before and after the inhalation.

On another occasion he had a fit two hours before an inhalation, and another four hours after it.

Another patient had an inhalation at 10.30 a.m., after having had six fits that morning. Ten minutes after, he had another fit. Nitrite of amyl was again inhaled at 1 p.m., followed by a fit at four, and another at five o'clock, the same afternoon.

A female epileptic inhaled 5 drops with the usual physiological effect on the circulation. The fluid had nearly all disappeared when she lay back saying, "Oh, my—" and in three seconds began to slide gradually out of her chair until she came upon her knees. Her face had now become pale, her lower lip trembled violently, and her teeth chattered.

Tonic spasms came on, passed off quickly, and were followed by violent convulsions, and afterwards temporary insensibility.

The nitrite of amyl was tried in epileptic mania with no benefit.

An equally unsatisfactory result followed the use of chloral hydrate in a few cases of epilepsy.

In two cases having every night several fits, 25 grain doses were given at bed time, in whiskey and water. The patients had the fits as frequently as before.

PART II.—REVIEWS.

The West Riding Lunatic Asylum Medical Reports. Edited by J. Crichton Browne, M.D., F.R.S.E. Vol. iv.

This volume is made up of contributions by gentlemen, some of whom are connected with the Wakefield Asylum, and some of whom have never enjoyed that advantage. As it professes to be "The West Riding Lunatic Asylum Medical Reports," it would seem more fair to the former gentlemen, in our notice of this collection of papers, to confine our attention to their productions alone, thus letting them stand on their own very decided merits, and removing them from under the shadow of the great names that figure

as the authors of five of the twelve papers. It is true that we thus leave half the book unnoticed. A very cursory examination of the non-Wakefield portions, however, shows that the gist of them all can be got in the other writings of their respective authors, or elsewhere. It does not come under our province as a reviewer, but after reading the various papers we had a strong feeling, to which we cannot help giving expression, that had we been a Wakefield writer of an elaborate paper, containing the record of original experiments or observations, we should certainly not have enjoyed being relegated well on towards the end of our own reports. Scientific work is just as valuable when done by one man as another, and we do not like to see original work taking a place secondary to mere exposition, however interesting, forcible, or eloquent the latter may be. Were we the original investigator, we should be very apt to think that it implied a want of self-respect, and of a respect for our own work, to allow it to take such a secondary place. While making these remarks in favour of the native talent, we must not be understood to disparage the other contributors, whose articles are, as might have been expected, most interesting, readable, and instructive productions.

The first paper is one by Dr. Merson on "The Urinology of General Paralysis." After referring shortly to the researches of Drs. Sutherland and Beale, and those of Mr. Adam Addison—whose work on this subject has, we think, never got the credit or attracted the notice it deserves—he says that, in order to get a fair standard of comparison, he examined the urine of six healthy attendants in the Asylum, who were "under conditions of hygiene and diet similar to those existing in the case of the general paralytics to be examined." "These men were put on a diet of a fairly nitrogenous character. Their urine was then collected for three successive periods of twenty-four hours, and the absolute quantity of urea, chloride of sodium, phosphoric and sulphuric acids was determined each by careful volumetric analysis." A series of most careful and elaborate tables follow in reference to these men, and in reference to twenty-one cases of general paralysis in different stages of the disease. The urine of some of the latter was examined also when they were under the influence of Calabar bean and of alcohol. Altogether the investigation is a most complete and interesting one, and most creditable to Dr. Merson. The following are his conclusions:

1. The quantity of urea varies above and below the average of health, being in the majority of cases considerably increased. Probably also the uric acid is increased.

2. The quantities of chlorides and phosphoric acid are notably diminished; that of sulphuric acid remains about normal.

3. The specific gravity varies within wider limits than in health, but the mean does not differ materially.

4. The absolute quantity of urine passed is slightly below the average of the healthy cases examined, but, estimated according to weight of body, the amount excreted by seventeen general paralytics was slightly in excess of that excreted by six healthy men.

5. Under the influence of Calabar bean, there is a considerable diminution in the quantity of all the solid constituents, epecially the urea.

6. The results obtained in the three cases treated with alcohol are in favour of the view that both the quantity of urine and the amounts of solid constituents are diminished under the influence of that substance.

We would suggest for Dr. Merson's consideration in future investigations into this interesting subject, that he should examine the urine of a few more cases at different periods of the disease in the same case, and also observe the temperature of the body at the time of examination, thus taking into more account two elements of the first importance.

Dr. Benham details the results of some experiments in regard to the "Therapeutic value of cold to the head." For some of them he used Ludwig's Strom-uhr. After some observations on the physiological effect of cold on the body, and its supposed remedial effects when applied locally, he relates some very elaborate experiments made by pumping hot water through the arteries of dead bodies, noting the temperature as indicated by thermometers inserted under the skull-cap, both before and after the application of cold to the outside of the head. Dr. Benham then experimented on living dogs and rabbits, on healthy men, and on one maniacal woman. His results are as follows:

1. Experiments I. and II. directly indicate that so long as a current of warm fluid is passing through the intercranial vessels, the application of intense cold to the external surface of the scalp has no effect in abstracting heat from the intracranial tissues of the dead body to which the cold is applied.

2. Reasoning by analogy, and taking into due consideration the results of Experiments III. and IV., it seems almost certain that the same holds good with regard to the application of cold to the living body.

3. That the application of cold to one part of the body produces a diminution of temperature reflexly in other parts of the body in symmetrical relation with it, as has been demonstrated by Brown-Sequard, is further shown by Experiment V.

4. This principle holds good when the scalp is the part to which the cold is applied, and the intracranial tissues those expected to be acted upon reflexly, as indicated by experiments III. and IV., in the latter of which the intracranial temperature fell 2° F. So small an effect, however, must be considered unimportant when we take into consideration the intense cold necessary to produce it.

5. That the effect produced on the body generally is no more than a scarcely appreciable diminution of temperature, is indicated by Experiments V. to X. on the human body, and by Experiments XII. to XX. on the bodies of animals. In one case only, Experiment VIII., is the decrease as much as 4° F., in all the others not being more than 1° F. to 2° F., and in all those experiments that were sufficiently prolonged, after the application had been continued for a certain time the temperature remained stationary for about ten minutes, and then showed a decided tendency to rise again.

6. That the application of cold to other parts of the body than the scalp has some effect, though less in degree on the general temperature of the body, is shown by Experiments V., IX., and X.

7. That although the frequency of the heart's action was in most of the experiments decreased to the extent of from four to six beats in the minute, the strength of each beat, as indicated by the pulse, was slightly increased.

The therapeutic action of cold, when applied to the scalp, may be shortly stated, then, as follows:—It causes a slight lowering of the temperature of the intracranial tissues by reflex action; a slight diminution of the temperature of the body generally by the direct action that cold has in lowering the temperature of the stream of blood passing through the capillaries in direct contact with it; and a slight decrease in the frequency of the heart's action. All these effects, however, are so insignificant in degree and temporary in duration, that taking into consideration the violence of the remedy adopted, one cannot help thinking that a greater effect in the same direction may be more easily produced by other and less violent means, and the patient be saved the pain and discomfort of having his head shaved, and afterwards enveloped in a freezing mixture, as long as one may dare to continue its application.

Dr. Benham's experiments were ingenious and apparently carefully conducted, but there are many *non sequiturs* in his conclusions. His title is a misnomer, for his "therapeutic" experiments were confined to one case. We have seen a paroxysm of maniacal excitement completely subdued by cold applied to the head, the patient being meantime in a

warm bath; and what does Dr. Benham make of the experiments in therapeutics which so many of his patients perform daily when they go and hold their heads under a cold water tap, and say they feel better for it?

The article by Dr. Herbert Major on the histology of the brain in senile atrophy, is a careful and methodical account of his extended observations on this subject, and on the whole they confirm the facts recorded by other observers. Much credit is due to Dr. Major for the systematic manner with which he has treated his subject.

He observes that all the cells become affected sooner or later, but that the pyramidal cells are affected most. The disease attacks the frontal and parietal regions to a greater extent than any of the other regions. The lesion of the cells consists of granular degeneration; the first stage, as observed in the pyramidal cells, alters their size and shape, diminishes the number of their processes, and also the shape and form of the nucleus. The second stage consists of a deposit of granules either within the cell, on it, or in both places. These granules then break down, leaving spaces occupied by the nuclei, or by "a mass of particles." The nucleus in time also disappears, but the exact process of the disintegration Dr. Major has not yet observed. In the smaller cells, the lesion is one of atrophy, or shrivelling, more than of true degeneration. Regarding hypertrophied cells, the author states:—"We see that they may occur both in senile atrophy and general paralysis, while in both also they are of quite exceptional occurrence." From this statement we infer that he considers they only occur in these two diseases, which we cannot accept as correct, for the finest specimens of so-called hypertrophied cells we have seen in preparations made from the brain of a patient who died of acute melancholia. The arterioles and capillaries are found to be dilated, as also are the perivascular canals. The nuclei of the vascular walls are not greatly proliferated, but deposits of granules and of hæmatin crystals are frequent. The nerve fibres are coarser than natural, tortuous, and much broken up. The neuroglia is atrophied and wasted, the nuclei are altered in shape, increased in number, and frequently collected into small groups.

Three admirable lithographs accompany this paper, and Dr. Major concludes by stating that his observations apply to the gray matter of the cortex only.

Dr. Lawson contributes a paper on the "Hourly Distri-

bution of Mortality, in relation to recurrent changes in the activity of vital functions." He gives two charts, one showing the hourly distribution of 1,680 deaths in the West Riding Asylum, and comparing the result with Dr. Finlayson's results in Glasgow; and the other showing the distribution of the deaths at the West Riding Asylum over periods of three hours. Dr. Finlayson's maximum occurred between 9 and 10 o'clock a.m.; Dr. Lawson's between 8 and 9 o'clock a.m. The second table shows how very fatal the time between 6 and 9 a.m. was over every other part of the day. He also gives some general conclusions deduced both from his own experience and that of others:

(1.) That there are some hours which are associated with a great liability to death. (2.) That in acute and chronic diseases the maximum hours of death are widely different. (3.) That in chronic diseases a very large proportion of deaths occurs at a period which may be said to range through one hour before and one hour after 9 o'clock a.m. (4.) That acute diseases are characterised by two daily periods of marked mortality—the first in the dead of night, the second in the afternoon. (5.) That diseases grouped without distinction as to the duration of their course are distinguished by a maximum mortality rather later than that of acute diseases, and an elevated mortality corresponding with the maximum hours of death from chronic diseases.

Dr. Browne contributes an article on Acute Dementia, which is prefaced by a photograph, admirably executed; but the subject of which might be an epileptic or an idiot. The matter of the paper is arranged in the usual divisions of definition, etiology, etc., each of which contains something novel if not altogether entitled to adoption. We may venture, perhaps, to say that Dr. Browne's language is ornate and picturesque, but that there is some danger lest facts may be smothered by a too profuse employment of adjectives.

In the etiological section of the paper are to be found some novel ideas. This disease is stated to be perhaps the most independent of hereditary predisposition. Dr. Browne could only find a taint in three out of twelve family histories of patients labouring under acute dementia. In the remainder, there was, "as far as could be ascertained," entire freedom from it. The paucity of cases thus negatively examined, which Dr. Browne advances, prevents us from adopting his views on this point to the ousting of our previous convictions, which are founded certainly on the positive experience of not a few cases, and are in accordance with the

generally received opinion that it is one of the hereditary forms of insanity.

Monotony of thought and feeling, or mental inanition, is stated to be the one moral cause which is effectual. Dr. Browne traces the disease in numerous cases to the monotony of factories with their brick walls and "reiterative twining machinery," to the gaols and the treadmill, and to such conditions as are found in the naval service of the West Coast of Africa. He does not seem to believe in the efficacy of sudden and great moral impressions, unless preceded by marked physical prostration. He argues that such impressions act more powerfully on sensitive and mobile beings than on the duller and steadier, and consequently are not ready in causing the disease, because his patients are drawn from the latter class. This latter is an assumption hardly in consonance either with the facts of the stock-cases so often quoted—*e.g.*, the frightened apprentice of the Retreat, Pinel's joy-struck engineer—or with those of his own cases even; for two out of the three cured patients who are mentioned by him seem to have been lively after the attack. What must they have been before? We cannot entirely agree with him that physical misfortune is the chief avenue to acute dementia, though we quite admit that it is generally present, whether as a near cause or a concurrence we know not.

Following a highly elaborate delineation of the symptoms of the disease, well exemplified by four cases, comes a differentiation between it and its counterfeit—melancholia of the gloomiest description. To the latter, Dr. Browne applies the epithet "atonic" for no very apparent reason. It comes very dangerously near in sound to the word "attonita"—*thunderstruck*, which was originally applied, if we mistake not, to show the nature of the mental state. It would be absurd to suppose that the author means to translate this word as "atonia."

The broad pathology of the disease is, according to Dr. Browne, serosity in the pia mater. But his philosophy is scotched, if not killed, by an invitation to consider the following problem: "Now may it not be, to use a crude comparison, that acute dementia is dependent upon cerebral chilblains?" This is preceded by an indication of the fact that patients of this class often suffer from chilblains on the extremities. Now we must submit that chilblains, though often associated with extravasation, are essentially external

in origin, and a disease of the skin, not of the vessels; that they tend to ulceration and loss of substance by disintegration, whereas serosity or œdema in the cranial cavity is a *diseased condition* that usually results from loss of substance by atrophy. Had one of Dr. Browne's patients unhappily suffered from piles, he might just as well have made use of its presence to indicate the pathology of acute dementia. "Cerebral piles," indeed, would be as good a name. We think that the true pathology of the disease must be sought for in the brain-cells, and not in the vessels or circulation at all.

The treatment advocated is unexceptionably good—food, stimulants, exercise, occupation, and medicinal tonics, *e.g.*, quinine in large doses, iron, &c. To these he adds the use of the shower-bath for 10 seconds, and lastly, but according to his experience not least, the employment of electricity, of which he says: "I look to electro-therapy for a method of treating this disease more speedy and decisive than any that has been hitherto pursued."

The next article is one on ophthalmoscopic observations in acute dementia, from the pen of Dr. Aldridge. It shows that a large amount of good work is, in his hands, likely to lead to valuable reults. He has already, with much effect, detailed the appearances in the eyes of general paralytics and epileptics. In this case, a *résumé* of the ordinary symptoms of the disease might well have been spared us, seeing that the editor has himself written a long paper on the subject. The only point we note in this preface is that the forced connection between "*Melancholia Atonica*" (so-called) and *Melancholia Attonita* is more apparent than in Dr. Browne's paper, as the present writer uses the following sentence:—"I refer to atonic melancholia, melancholia *atonita* (sic), or the *melancholie avec stupeur* of the French."

The first practical point is that both acute dementia and *melancholie avec stupeur* are accompanied by anæmia of the discs, and rules are laid down whereby to separate this state from atrophy.

The next, and to us the most important, point is that œdema is often present in acute dementia, but *never* in melancholia.

Again, Dr. Aldridge has found that the intensity of the œdema has kept pace with aggravation of symptoms in the former disease. He also states that where gusts of excite-

ment occur in the course of the malady, corresponding vascularity has been re-established only to recede when the excitement passes off.

These are very valuable facts, and with the exception of that of the alternation of vascularity and anæmia, are well supported by a series of cases recorded with most creditable minuteness.

The inductions from these cases, however, are not sufficiently elaborated to incline us to accept them forthwith, but we by no means consider that, with a little care, Dr. Aldridge will not make out the correct pathology of the disease, so far as it can be made out by ophthalmoscopy.

Dr. Benham concludes the list by a paper on "The Actions of Nicotine." He administered this substance to man and the lower animals, finding that it killed the latter, not by paralysing the heart, but by stopping the respiration. Indeed, he says it quickens and strengthens the heart's action, and recommends its use for that purpose. Another powerful weapon, truly, for the smoker with which to repel the attacks on his favourite weed. He found nicotine to contract the pupils, but its other effects on man were most variable.

The Elements of the Psychology of Cognition. By Robert Jardine, B.D., D. Sc. Macmillan & Co. 1874.

This work, designed principally for the use of students, is offered as an introduction to the study of the psychology of the intellectual part of the human mind. The author hopes, however, that those who have already studied the subject will find something to interest them. We doubt greatly whether they will; nay more, we feel some doubt whether it is adapted to be a light unto the path of students. The book is certainly written in plain and simple language; the subjects treated of in it are lucidly, if not deeply, discussed; and there is no fault to be found with the tone of the author's criticisms. But we shall best, perhaps, indicate what we have found amiss in it if we say that we have met with little, if anything, in its contents which might not have been written a few years after Locke's death. It is one of a class of books which testify to their authors having read Locke, Hamilton, John Stuart Mill, and perhaps Herbert Spencer, and thereupon concluded that they had sounded all