It cannot be denied, in the face of so many eminent authorities, that there exists a large group of cases, originating primarily from a long period of incubation, following a constant course evolving through fixed stages, and the separation of which from others now ranked in the same class is not difficult. If we are to reclassify the old monomanias and take up a new terminology the classes renamed should be as distinct as possible. That class termed paranoia persecutoria by the Germans, délire chronique by the French, is admittedly the most typical of paranoias, and it would save much clinical confusion if the term were confined to that class only, admitting therein all cases whose slow evolution of delusion and logical systematization in connection with hallucinations of a painful and distressing kind, points from the first to a chronic disorder, whether the subject thereof may happen to bear the marks of a faulty heredity or the reverse.

Remarks upon the Influence of Intestinal Disinfection in some Forms of Acute Insanity. By John Macpherson, M.B., F.R.C.P.E., Stirling District Asylum, Larbert.*

Every asylum physician must regret the necessity that exists for the employment of narcotic hypnotics in medical practise among the insane, and there are probably few who have observed it who do not deplore the far too extensive use of sedative and depressing drugs, which is unfortunately the common custom in some asylums.

One is therefore readily led to consider whether some other means less injurious, more physiological, more permanent in action might not be substituted for narcotic remedies. Recently a form of therapeutic fashion has arisen in our specialty, which in its advocacy of certain new drugs, such as paraldehyde, urethane, sulphonal, etc., has sought to classify them as sedatives or hypnotics in contradistinction to narcotics. Anyone, not a partisan of the use of the drug, who has observed a patient under the full influence of such a drug as sulphonal cannot fail to be painfully impressed by the spectacle, and every doubt as to the alarming narcotic power of the drug must be dispelled. It is not, however,

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against the valuable action of sulphonal in certain cases that these remarks are indited, but against its misuse and against the fallacy by which it is sometimes made to appear that the drug in large doses is not a narcotic poison.

Many physicians, including myself, have been trained to regard narcotics as injurious (in acute cases), and as tending to retard the course of recovery. I have invariably found that after a good night's sleep, the result of a sedative narcotic, the excited patient was next day noisier and more troublesome and the melancholic more distressed in mind.

We have, therefore, to deal with a reaction which can only be overcome by the continuous administration of the drug, which in many cases means the emaciation of the patient and the depression of his physical vitality.

It is claimed for sulphonal that it has the power of warding off the periodic attacks of some forms of recurrent insanity.

It ought to be within the knowledge of asylum doctors, for it is a well-known fact in the experience of many old asylum attendants and patients, that there is another and simpler way by which these attacks are often abortively checked, namely, by the administration of a smart hydragogue cathartic purge.

Over and over again have I heard of patients, knowing that a periodic attack was imminent, asking their attendant for a dose of salts or a dose of castor oil, a request which was generally gladly complied with, for both the patient and the attendant foresaw an anxious time of longer or shorter trouble before them, which, if once established, no drug had power to remove.

This fact impressed itself upon my mind, and led me, in conjunction with the other two or three reasons that follow, to take up this subject.

Constipation of the bowels undoubtedly tends towards the exacerbation of the symptoms of acute mental disease, and an instantaneous though temporary improvement follows the relief of a loaded intestine.

Again, there is in every acute case of insanity a marked and apparent disorder of the gastro-intestinal tract.

This affection is probably secondary and sympathetic, but even then it must exercise through the sympathetic system of nerves an irritating and disturbing influence upon the general bodily functions, besides being the source of continual contamination of the whole system by the formation

within it and the absorption from it of the products of putrefactive change.

It is possible that the naso-pharyngeal and gastro-intestinal affections, which are the concomitants of certain forms of stupor, are something more than sympathetic, and if not coincident with the nervous affection are at least symptomatic of it.

It is a fact that is widely known that the administration of calomel or other forms of mercury in purgative or laxative doses is sufficient to induce sleep, and the fact has been pointed out by Dr. Lauder Brunton that nux vomica in small doses acts in some cases as a mild hypnotic. Some purgative medicines, besides calomel, have a soporific influence. But I was chiefly led to the consideration of this subject by a passage in the work of Sir Charles Bell upon the nervous system. At page 355 he is describing the treatment of tic douloureux, illustrated by several cases.

> After some weeks of attendance, one morning (whilst I was surrounded by the out-patients) this man, not waiting his turn, burst through the crowd calling out he was cured! This, no doubt, he did from his confidence in the interest young and old had taken in his sufferings. I knew not what I had given him, but looking at his card I found the following:—Ol. Tiglii (Croton) gtt. i.; Mas. Pil. Colocynth Co. ʒ i.; misce et ft. pil. xii.—one of the pills to be taken on going to bed. . . . Impressed with these facts, the moment that we see the map of the relations of the sympathetic nerve with the second division of the fifth by a large and direct branch, and lesser connexions of the same nerve with all the branches of the fifth, we surely need look no further in explanation of the frequent and intimate dependence of a painful affection of the face upon the state of the digestive organs.

This illustrative case is followed by a string of others hardly less instructive, in which the wonderful effect of this purgative combination in the relief of trigeminal neuralgia is set forth. While we are not bound to accept Bell's explanation we are still met by the fact that certain drugs in certain combinations have an action through the intestinal tract upon the central nervous system. We also know the effect of disorder of the gastro-intestinal tract upon the nervous system, and chiefly upon the mental manifestation.

We know that certain forms of gastric and hepatic derangement are accompanied by mental depression. There is a form of melancholia which might be described as visceral. There is great uneasiness over the region of the stomach and

bowels, with rapid formation of gases and acid eructations and physical and mental distress after food. Once it is established it is relieved, though not cured, by the administration of mercurials and gastric tonics. In a certain degree, however, it may be said that every melancholia is visceral, or at any rate manifests the constant concomitant of gastro-intestinal affection. The mouth is dry, the tongue is furred, the digestive functions of the stomach impaired, and the bowels constipated. It is therefore quite conceivable that the relief of this condition should be followed by the temporary or permanent relief of the nervous affection, of which it is a concomitant or secondary effect. But the state of the gastro-intestinal tract is, I believe (and upon this fact I found my theory of the treatment that follows), in its disordered state the source of a further element of complication and aggravation of acute mental diseases. For it more readily permits of the formation of poisonous ptomaines, gases, and other products of putrefactive change which enter the circulation and deleteriously affect the nervous system. Recent researches seem to prove that the acid of the gastric juice is primarily and chiefly an antiseptic agent, and that its function of aiding peptic digestion is a subsidiary and secondary one. It is the only example in nature of a mineral acid being secreted by a living membrane, and the teleological view of its origin is strengthened by the fact that in the mollusca the acid is not hydrochloric, but sulphuric, and that it contains no digestive ferment.

The total destruction by a healthy stomach of foreign or pathological germs which might enter with the food and cause further mischief in the intestines is thus secured.

Where the gastric secretion is perverted, as in acute mental disease, this antiseptic power is in abeyance. It is proved that the pancreatic juice, which is alkaline, is very slightly antiseptic, and according to Bunge so slight is the antiseptic power of the bile that it will not keep itself fresh for forty-eight hours.

With the view of attempting to supplement the weakened activity of the alimentary tract, and with the object of checking the formation of ptomaines, due to putrefaction and imperfect proteid digestion, I resolved to attempt by the following methods, which though they have only been followed by partial success, yet appear to suggest a probable opening up of a new way for the relief and amelioration of many forms of mental affection.

When a case is admitted that seems a suitable one for this form of treatment the stomach is carefully washed out, and the character of the contents is usually such as to justify this simple procedure "*per se.*" A dose of calomel varying from two-and-a-half to four grains, according to the patient, is administered in the evening, and is followed, if necessary, by some mild cathartic in the morning.

It is better to continue to wash out the stomach every day or every second day during the course of the first week, and to pay special attention to the bowels, which must not be allowed to become constipated. In order to secure their action, some form of laxative such as Pulv Rhei. Co. or cascara and liquorice should be regularly administered.

On the morning of the second day of the patient's residence the special treatment is begun, which consists in the administration of naphthalin in 10 grain doses three times daily in the interval between meals, which may be gradually increased until as much as 60 or 80 grains are given in the course of 24 hours.

After reading the experiments of M. Fere and a paper in the British Medical Journal by Dr. William Hunter, on "The Treatment of Pernicious Anæmia," I was led to use beta or iso naphthol, but I afterwards abandoned it entirely in favour of naphthalin, having had a much more satisfactory experience in the use of the latter drug.

Naphthalin has the chemical formula $C_{10}H_8$. It is excreted in the urine partially unchanged and partially as beta naphthol $C_{10}H_7OH$, and partly as phenol C_6H_5OH, so that its power of disinfection seems vastly superior to that of naphthol.

In my hands, and for the purpose I had in view, naphthalin exercised an incomparably stronger influence than naphthol.

It is said to be poisonous when absorbed into the system, and its great insolubility is said to be the safeguard against its toxic effects. After using it in large doses several hundred times, I can state that in no instance or at any time was there the remotest symptom of poisoning apparent.

Further, there was no interference whatever with any of the functions of the body.

The test of the utility of such a drug as naphthalin in inhibiting putrefactive change within the body is the diminution of the aromatic sulphates in the urine.

In order further to prevent the formation of putrefactive

products in the intestine, nitrogenous food was, as far as possible, eliminated from the dietary of the patients undergoing treatment, and peptonized gruels were, therefore, administered to those cases requiring food in addition to the ordinary meals instead of custards.

Nothing in this form of treatment contra-indicates, so far as I know, the employment of any other drug at the same time.

In none of the cases were single doses of naphthalin followed by any marked results. In the great majority of cases it required continuous administration for several days to produce the desired effect.

The following cases are given as illustrating the action of naphthalin, and as typical of the results obtained:—

Case I.—Female, aged 65, suffering from delusional melancholia, with great excitement, noise, sleeplessness, refusal of food, and bodily emaciation. She imagined that she was to be burned alive or scalded to death in a hot bath, and did not cease to scream and shout with terror and struggle with the attendants. About one month after admission the usual preliminary treatment was adopted, and naphthalin in 10 grain doses was administered with the feeding tube three times a day. Within three days after the commencement of the exhibition of naphthalin, the patient became quiet and began to sleep better at night, and by the end of the first week of treatment she had ceased to manifest any symptoms except the delusional expressions.

These disappeared gradually, and she finally recovered two months after the commencement of the special treatment. Weight during treatment increased from 112lbs. to 124lbs.

Case II.—Female, aged 23, labouring under melancholia, with impulse, a tendency to stupor and suicide, refusal of food, and sleeplessness. She was resistive, and refused to answer questions or to respond in any way when addressed. She was at once put under treatment, and began to improve forthwith. At the end of three weeks she was working industriously in the ward and taking her food well. She replied to questions in monosyllables or by signing with her head. She continued in this condition until her removal from the asylum, ten weeks after the commencement of treatment. Weight at commencement of treatment, 112lbs.; ten weeks later, 116lbs.

Case III.—Male, 47, melancholia; had attempted suicide prior to admission, very depressed and suicidal, refused food, and was sleepless. No change in his condition having taken place, the special form of treatment was begun five weeks after admission. He steadily improved, and was discharged recovered exactly one month from the date of the commencement of treatment. Weight before treatment, 140lbs.; weight at time of discharge, 147lbs.

CASE 4.—Male, 58, presented alternately symptoms of mania and melancholia, was at times very excited and noisy. He slept badly and was very troublesome. He was put upon treatment about a week after admission, and immediately thereafter calmed down and became less troublesome. In about three weeks he became, to outward appearance, quite sane, but retained delusions regarding his family. Weight before treatment, 135lbs.; after quiescence, 141lbs.

The following is a brief description of the results of the treatment of thirty acute cases, chiefly cases of melancholia:—

Bodily Health.—In no case was there any apparent interference with appetite, digestion, assimilation, or with the regular action of the bowels or the excretory function of the body.

The action of the drug in the prevention and removal of anæmia was so marked in the cases treated that I desire to draw special attention to it.

The bodily weight increased steadily in most of the cases during the administration of the drug, and it is significant that in no case was there any loss of weight. When it is remembered that the dietary was as non-nitrogenous as it could, physiologically, be made, even to the exclusion of eggs, it is all the more important to record this fact as indicating a tendency on the part of the drug to promote digestion and assimilation. It also proves the power of the drug directly or indirectly to counteract those conditions of excitability of the nervous system which are so inimical to nutrition.

The usual tendency to pigmentation of the skin so common in melancholia was checked, as also the dry character of the skin and its appendages, which was replaced by a well-nourished, smooth appearance.

The promotion of sleep was perhaps the most unexpected and gratifying result of the exhibition of naphthalin. In a few cases single doses of the drug were sufficient to induce sleep, but in the more severe cases and in the majority of the cases treated it required the continuous administration for two or three days before the sleep habit was restored.

When fully under the influence of naphthalin the patients slept normally and naturally for seven or eight hours, and awoke apparently refreshed.

In one case, where for three nights in succession 20 to 30 grains of sulphonal did not cause sleep, one dose of naph-

thalin (30 grains) gave the patient a good night's rest, and continued to do so upon repetition each night.

In the present negative state of our knowledge with regard to the mode of action of hypnotics, it is, of course, impossible to state definitely whether naphthalin is a direct hypnotic in the sense that paraldehyde or sulphonal is, but I am inclined to believe that it is not. 1. The sleep was undoubtedly not narcotic in its nature. 2. It did not require an increasing dose of the drug to continue its action each successive night once the sleep habit had been induced. 3. There was no increase of motor restlessness, mental distress, or excitement on the day following a good sleep.

Therefore it appears more likely that the sleep-inducing qualities of naphthalin are of an indirect nature, and are due to the suppression of those causes that prevent normal sleep.

The Mental Symptoms.—What has just been remarked regarding the hypnotic effect of naphthalin applies equally to its action upon the nervous system. It has probably an indirect, but it may also have some direct, influence upon the cortex. I have been unable to discover any objective physical signs indicative of any special action upon the central nervous system, nor have any of the patients complained of any subjective sensations or unusual experiences.

The drug undoubtedly cut short some of the attacks, chiefly milder melancholias. In the majority of cases it did not shorten the period of mental disturbance, but it modified the symptoms to a marked extent. The mental distress and motor restlessness of melancholia rapidly disappeared, the suicidal cases became quieter, and the tendency to impulse in all the cases was almost entirely removed. The aspect of a ward in which five or six recent acute cases of melancholia lived was so much modified by this treatment as to be in itself a sufficient justification for the use of the remedy. These (female) patients represented most of the ordinary clinical varieties of melancholia, but gradually the distinctive symptoms of each variety disappeared, and the patients, though continuing to be melancholic and delusional, became sedate, industrious, less dangerous to themselves, and less troublesome to their nurses.

This power of the remedy to modify the prominent, troublesome and distressing symptoms of acute melancholia is all that I now claim for it.

With regard to its use in mania, I am not at present prepared to make any statement. In one case of acute mania in an adolescent subject it induced normal sleep, and by means of single doses administered each evening sleep continued to be secured to the patient. At the same time the patient rapidly gained weight.

I feel justified, therefore, in summarizing my knowledge of naphthalin in the treatment of certain forms of acute mental disease as follows:—

1. The drug proved safe and harmless in all the cases. As much as 170 grains were given to one patient in twelve hours with no evil effect.

2. It failed in several cases to produce any effect, but some of the failures I now attribute to the fact that the drug was not pushed far enough in sufficiently large doses.

3. Its influence upon the bodily condition was to promote nutrition and to induce normal sleep.

4. Its influence upon the mental state was to modify and abate the distressing and more violent symptoms, and to hasten on a condition similar to commencing convalescence.

5. The purely psychical disorder of the brain was in no way affected by the treatment.

The Payment of Asylum Patients for their Work. By CHARLES MERCIER, M.B.*

It is unnecessary to expatiate to this Association upon the extreme desirability of inducing the patients in asylums to employ themselves usefully, nor is it needful to dwell at length upon the extreme difficulty that is often experienced in so inducing them. It may be taken as a fact that many inmates of asylums who are able to work are unwilling to do so, and, if we listen to their explanation, the unwillingness is not altogether unreasonable. "I was placed here," such a patient will say, "against my will. I did not come of my own accord. I am under no obligation to facilitate the plans of those who put me here, nor of those who keep me here. My refusal to work is a protest against the deprivation of my liberty. If I have to engage in the work of the asylum I should, in the first place, forego my protest, and to that extent admit the justice of my incarceration;

* Paper read at the Quarterly Meeting of the Association, November 17th, 1892.