offender." This is followed by an essay on "The Philosophy of Crime and Punishment," by Dr. W. T. Harris. Then follows the paper on "Criminal Anthropology," by Dr. Hamilton D. Wey, to which I called attention in the Retrospect for last April. Then comes an interesting paper on "New York's Prison Laws," more especially the Fasset Law of 1889, which "is above the high-water mark of all previous legislation, on both sides the Atlantic, in the prominence it gives to reformation as an avowed object in the treatment of convicts." This law gives the courts a discretionary power of carrying out the indeterminate sentence—the foundation-stone of the scientific treatment of criminality. The volume concludes with papers on "Prison Labour Systems," and "The Elmira Reformatory of To-day." It is to be feared that many years must elapse before our convicts in this country are set to such excellent tasks as the editing and publishing of such volumes as this, or before any one of our huge prison establishments becomes, even in the slightest degree, such a centre of light on criminological matters as Elmira.

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4. *Therapeutic Retrospect.*

By HARRINGTON SAINSBURY, M.D.

Hydrochlorate of Hyoscine and its Employment among the Insane. By Drs. RAMADIER and SÉRIEUX. ("Bulletin Général de Thérapeutique," January 23, 1892.)

The salt employed in these investigations was obtained from Merck. The authors' statements are based upon a two years' administration of the drug at the Vaucluse Asylum. They first touch lightly upon the physiological action of the drug, laying special stress, however, upon the general paresis, most marked in the lower limbs, which follows a full dose of the salt. This general muscular relaxation includes, of course, the intraocular muscular relaxation, but it may also include a complete relaxation of the vocal cords, which is attended by more or less complete aphonia.

Next they enumerate the diseases mostly belonging to the spasmodic group, in which hydrochlorate of hyoscine has been employed, *e.g.*, asthma, whooping cough, chorea, etc. Then they proceed to discuss its use in mental disease. Mania, however produced, is the condition which indicates hyoscine, *e.g.*, simple mania, alcoholic delirium, epileptic delirium, mental excitement, following upon intense sensory impressions, the excitement observed in certain cases of melancholia, maniacal excitement of general paralysis, symptomatic febrile delirium. Hypodermic administration is the best. The dose should be tentative, and should begin with, say $\frac{1}{200}$ grain or even $\frac{1}{300}$, if the patient be weakly.

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According to the results obtained, this dosage will be continued for a few days, or an advance may be made to $_1\frac{1}{80}$ grain or $_1\frac{1}{20}$ grain. A certain amount of tolerance follows the continued use of the drug, but much less rapidly than in the case of morphia; the dose may then have to be advanced to $\frac{1}{70}$-$\frac{1}{60}$ grain, or to double this quantity. Salgo, of Buda-Pesth, has given as much as $\frac{1}{25}$ grain (3 milligrammes).

The effects follow an injection in about 10-30 minutes; sometimes they delay longer. The patient, whose motor excitement has up to that moment been difficult to restrain, then begins to feel weak on his legs. He may stagger and complain of vertigo, and that he has been made tipsy. His voice becomes hoarse and may even quite fail him. He sinks into a chair, and, if he succeeds in rising, he falls back quite limp; he may then stretch himself out and go to sleep. The result is very striking.

Sleep, if it follow, and it is the exception for it to fail, is of variable duration; it generally lasts several hours and may do so right through the night if given late. If sleep do not occur, the patient is quiet. Like morphia, hyoscine sometimes causes nausea or even vomiting. Mydriasis is almost constant; diplopia may occur; the face may be congested.

The authors' point out that hyoscine is not to be regarded as a mode of treatment of mania, but as a palliative, enabling us to tide over certain crises of excitement which, through the loss of sleep entailed and the refusal of nourishment, threaten grave complications. They also have found it useful in the treatment of surgical complications, when the patients were wholly unmanageable. We might say that hyoscine, as they employ it, takes the place of the strait jacket.

What are the contra-indications? In general, cachectics and cardiac patients are ill-fitted to receive the drug, but, on the other hand, Mitchell Bruce has given it in cerebral and aortic disease, in double pneumonia, in albuminuria. The authors think it may be given safely to general paralytics. They hold with Kraepelin that delirium or *collapse*, sometimes witnessed as a sequence to the injection, depends on the presence of impurities. During two years' routine use at Vaucluse on over two hundred patients, they have no accident to record, and they consider that, though calling for cautious use, hyoscine is a valuable sedative where other drugs fail, and that it is very preferable to hyoscyamine, which very commonly causes delirium.

M. Constantin Paul, commenting on this paper, refers to methods already at our disposal for combating cases of mental and motor excitement, *e.g.*, chloral hydrate, given by him in 90-grain dose as an enema and with good results; sulphonal, so much used of late, etc. He says, further, that, despite the unfavourable reports of the use of hyoscine by P. Nacke and Serger, that the general opinion bears out the value of hyoscine.

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Case of Hyoscine Poisoning. By Dr. EMIL KORN, of Tapiau. ("Therap. Monatsh.," December, 1891.)

The dose taken, probably with suicidal intent, was one centigramme of hydriodide of hyoscine (the doses usually exhibited vary between 0·0002 grms. and 0·003 grms.). The patient, besides suffering from thoracic disease, was melancholic and the subject of delusions of persecution. The effects of the dose were: Stupor, with stertorous breathing, flushed face, and dilated pupils. The action of the heart was not influenced. About $\frac{1}{14}$ grain of apomorphia was exhibited subcutaneously, but without effect (on account of heart disease it was feared to give more), an ice bag was applied to the head, sinapisms to the calves of the legs, and black coffee administered by the mouth in teaspoonful doses. On awaking three hours after there was headache and dryness of the mouth. The next morning the patient was sufficiently recovered to leave his bed.

In spite, therefore, of alarming symptoms, we note here a speedy recovery after a dose exceeding the maximum by more than three times.

On the Use of Duboisine Sulphate in the Treatment of Mental Affections. By Dr. MAX LEWALD, Liebenburg. ("Therap. Monatsh.," December, 1891.)

This author obtained good results from the hypodermic injection of 0·002 grms. (0·031 grains) of sulphate of duboisine in cases of mental excitement. The first symptom obtained is mydriasis, then the excitement quiets down (10-30 mins. later) and then sleep sets in. In 75 per cent. of 22 cases sleep was thus obtained; it lasted from 2-7 hours. Of other symptoms, there were noted before the occurrence of sleep, vertigo and lassitude, and, rarely, staggering, also thirst and dryness of the throat. In one case the injection was followed by extreme dilatation of the pupils, increased unrest, a pulse of 168, very small and hurried respirations, 35; there was marked redness of the face. The remedy is, therefore, not without danger, and the dose of 0·002 grms. is not to be exceeded.

Dr. Vladimir Preininger, of Prague, obtains essentially the same results with hypodermic injection of duboisine sulphate. He counsels that the dose should not exceed 0·002 grms. (about $\frac{1}{35}$ grain), since doses even of 0·0025 and 0·003 grms. are frequently followed by toxic effects. In the dose of 0·002 grms. a sedative, hypnotic effect is almost always produced. Taken by the mouth, the effect of duboisine sulphate is much less than when injected hypodermically. The action is analogous to that of hyoscine.

Duboisine, of course, is regarded as identical with hyoscine and iso-meric with hyoscyamine and atropine. It is considerably more active than these two last. At present there seem to be no

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special indications for duboisine in preference to hyoscine or an equivalent dose of hyoscyamine.

Bromides.—In the "Annuaire de Thérapeutique" (supplément au "Bulletin Général"), February 8, 1892, we find a tabular statement of the relative poisonous action of the bromides; a long list. Intravenous injections were made by Dr. Féré with one per cent. solutions. The animals experimented on were rabbits; the fatal dose was in each case recorded. His results place, as most poisonous, mercuric bibromide; bromide of cadmium follows next; arsenic and potassium bromides come next to each other at some distance on the list, though the arsenic salt ranks as about twice as poisonous as the potassium salt. Calcium, strontium, lithium, and sodium, in this order, finish the list. We are astonished with this relative placing of calcium and strontium, and also that barium is separated by a very long distance from strontium, but we should fully agree with the placing of sodium as least poisonous of all the salts of bromine (Société de Biologie). Bromides are so much used by alienists, that a really comparative list of the toxic values of the bromides would be most interesting. Can we accept this tabular statement as at all final? We doubt it.

Treatment of Tetanus by Chloralhydrate in Combination with Bromide of Potassium. By V. POULET, Plancherles Mines ("Therap. Monatsh.," December, 1891).

Of the various methods of treatment of tetanus, the local method comes too late, and the eliminative by diaphoresis, etc., does not promise much. The most efficient mode of dealing with the developed malady appears to be by means adapted to strengthen the nervous system, or to render it insensitive to the action of the poison of tetanus. Of the many drugs suggested for this latter purpose, *e.g.*, hypodermic injections of morphia, atropine, cocaine (?), eserine, cannabis indica, etc., none is so reliable as the combined use of bromide of potassium and chloral, the patient whilst under this treatment being kept as absolutely quiet as possible in a darkened room, from which all noise is excluded (the ears of the patient should be plugged with cotton wool). Liquid, highly nutritious diet, must be administered at regular intervals, every four hours. As to the dose of chloral and bromide, Dr. Poulet saw excellent results in two very violent cases, in which during 12 days 93 grains of each drug were administered daily (*i.e.* 6·0 grammes pro die).

This treatment is in agreement with H. C. Wood's teaching, that the combined use of chloral and potassium bromide should constitute the basis of the treatment of tetanus. He advocates, however, a much freer use of the bromide, of which, he says, not less than half-an-ounce, 217 grains, should be given pro die. It is interesting to note that the means of combating the excitement or

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instability of the lower centres in tetanus are those most effectual in the treatment of a similar instability of the cortical cells in mania. For in this latter disease is there any combination of drugs more generally successful than bromide and chloral? In convulsions of cortical origin (epileptic), the bromides hold the field, and in the more acute epileptiform seizures, constituting the status convulsivus, no drug acts more promptly and strikingly than chloral hydrate.

Case of Sulphonal Poisoning ("Therap. Monatsh.," December, 1891).

The report is from Hungary, the case, that of a man of 54, a chronic dyspeptic, who, through recent business worries, had suffered much from sleeplessness. He was ordered a nightly dose of 30 grains of sulphonal, to be repeated in two hours if without effect. By the end of a week the patient had taken some nine or ten doses. His condition at that time included the following symptoms: Anorexia, nervous apprehension, vertigo, clonic spasm of the muscles, in particular of those of the trunk. The patient gave the impression of a dement; he was very restless, excited, and sleepless, his memory failed him, and he was very depressed. Mentally he was confused. During his interview with the doctor he suffered from repeated clonic spasmodic attacks, during which there was dyspnœa and great mental distress.

On cessation of the sulphonal, and treatment with chloral hydrate and suitable diet, the patient began at once to mend. He became more cheerful, and the spasms left him entirely. "Rational" treatment of the patient's primary trouble (the chronic dyspepsia?) is also mentioned, but what this was is not stated.

We should hardly have expected that chloral hydrate would help in such a case, but since the dose of this drug is not mentioned, we cannot judge whether the improvement is to be regarded as due to the sulphonal withdrawal rather than to the chloral exhibition. The interest in the toxic effects of sulphonal remains.

Sulphonal Habit ("Lancet," February 20, 1892).

It was maintained at one time, of course during the early days of sulphonal administration, that the drug did not establish a habit. How this might be, it was difficult to understand, for any substance exciting a desired effect upon the organism must, if habitually taken into the system, root itself in the affections of the taker. We should be more than human if this were not so. In a recent lecture given at the Congress of German Neurologists at Baden, June, 1891, Dr. Gilbert, of Baden Baden, describes two cases of habit, amounting to "a perfect mania," in which enforced abstinence gave rise to a series of symptoms similar to those witnessed in morphia abstinence. Two other cases were described in

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which serious symptoms were present, as the result of the continued use of sulphonal. All four cases showed among their symptoms illegibility of handwriting; the patients could not write straight, and the characters were unsteady. Attention is drawn to the fact that sulphonal is very largely used in Germany, and that it can be obtained from the chemist without medical prescription. The same thing surely holds in England, where the tabloid system reigns supreme. What, indeed, can we not get in most acceptable and portable form! To such an extent have new drugs invaded the country, and established for themselves an uncontrolled sale, that we cannot be too thankful to those who will make plain the dangers of the practice.

Dr. Gilbert concludes with recommendations of how the drug should be taken if it must be given, viz., in solution in boiling water, poured on, and allowed to cool just sufficiently to be drinkable. Sleep will follow in some 15 to 20 minutes when this method is adopted. This mode of administration is already largely in vogue among us.

Pental as an Anæsthetic. By Prof. HOLLÄNDER, Halle A. S. ("Therap. Monatshefte," October, 1891, and January, 1892).

We make no apologies for introducing this substance into the "Journal of Mental Science," for the relation between hypnotics, narcotics, and anæsthetics is so close that they indeed form one large pharmacological group; they help us to abolish the functions of the cerebrum, whilst life, hanging on by the centres in the medulla oblongata, is still maintained. The whole theory of anæsthesia depends upon the less resistance of the higher cortical centres, the greater resistance of the lower centres in the medulla. The group of the anæsthetics proper, *e.g.*, chloroform, ether, laughing gas, etc., is separated from the group of the hypnotics, *e.g.*, chloral, sulphonal, paraldehyde, etc., etc., by such comparatively unimportant characters as speediness of effect, and speediness of disappearance of the effect; these have great practical, but little philosophical value. Moreover, the close relationship between hypnotics and anæsthetics is seen in the slight differences in chemical composition, which may exist between members of the two groups, *e.g.*, the hypnotic chloral hydrate, the anæsthetic chloroform. This point is further illustrated by the body under consideration, pental, another name for which is amylene, for this substance, as an anæsthetic, has a congener, amylene hydrate, which ranks as a hypnotic. Dr. Holländer, in his first contribution on pental, drew attention to the history of the discovery (in 1844) and the use of amylene, C^5H_{10} (in 1856-1857), as an anæsthetic. The reports were most eulogistic, then the drug practically disappeared, and we hear no more of it. Dr. Holländer presumes that there must have been difficulty in obtaining a uniform substance, and that for the

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