The following are the titles of some recent articles on the Pathology of the Nervous System and Mind, and on Pathological Anatomy.


c.—THERAPEUTICS OF THE NERVOUS SYSTEM AND MIND.

Sophoria.—This is the name given by Dr. H. C. Wood, Phil. Med. Times, Aug. 4, to an organic extract or alkaloid obtained from the seeds of Sophora speciosa, a Texan plant sometimes used by the Indians of Southwestern Texas as an intoxicant.

The extract, as obtained, was of a yellowish white color, amorphous, soluble in acidulated water, and very freely in ether, but not in pure water. It was precipitated by alkalies.

The results of physiological experiments with an alcoholic extract of the bean, were as follows:

In frogs it produces a rapid loss of reflex activity and power of voluntary movement. The loss of power is not due to any action upon the motor nerve-trunks, as after death these were found to preserve their normal susceptibility. Further, tying the sciatic artery upon one or both sides of the frog did not influence the action of the drug upon either voluntary or reflex movements. This would indicate that the poison is a spinal sedative, and has little or no effect upon either motor or sensory nerves. In all cases the heart continued beating long after the cessation of respiration.

Upon mammals the effect varies somewhat in accordance with the dose. An amount of the extract estimated at two grains (?) produced in a full-grown tom-cat, in one minute, marked weakness in hind legs, in two minutes, inability to stand, with evident effect upon the respiration; in three minutes, convulsive movements, with loss of consciousness, continuing with ever increasing embarrassment of the breathing for three
minutes, when all attempts at respiration ceased. The heart kept on beating for one and a half minutes longer. The pupils were unaffected at first, afterwards dilated.

In small quantity the extract produces in the cat vomiting, great muscular weakness, profound quiescence, and deep sleep lasting some hours and ending in recovery. In dogs the symptoms were similar to those noted in cats. Death always took place through the respiration. In a single cardiac experiment the drug had no decided effect upon the blood-pressure until towards death, but appeared to accelerate the cardiac beat.

The alkaloid is very active as a poison, a very minute quantity producing almost complete paralysis in a frog within two minutes. One-twentieth of a grain of a very impure specimen produced in a half-grown cat, deep sleep lasting many hours.

BROMIDE OF POTASH IN NEUROSES OF THE HEART.—Dr. Joseph Angri-
1. Bromide of potassium has a depressant action on the vaso-motor centres and the cardiac plexus.
2. This effect is produced on the vaso-motor centres by a special mode of action, and not because the bromide exerts an action on the smooth fibres of the capillary vessels. The narrowing of the lumen of the capillaries may rather depend upon the release of the action that the bromide produces on these centres, and vaso-motor nerves in physiological experiments.
3. Bromide of potassium has no action on the muscular fibres of the heart, like digitalis, nor has it any action on the arteries.
4. The most useful and effective therapeutic action of the bromide is in correcting functional anomalies of the heart, such as frequency or intermittence of pulse, arhythmia, etc., whatever may be the condition of the myocardium.
5. It relieves angina pectoris and palpitation quickly and safely when they are pure and simple neuroses. Those cases that depend upon serious anaomo-pathological alterations of the heart, are considerably modified by the bromide, and also sometimes completely cured for a longer or shorter period.
6. The bromide in the cases of the said neuroses is advisably followed always by treatment directed to a radical correction of the cause of their production.

THE ANTAGONISM OF ACONITE AND DIGITALIS.—Dr. J. Milner Fothergill publishes in the *British Medical Journal*, Aug. 4, his first and second reports on the antagonism of aconite and digitalis. The first report gave some conclusions as to the antagonism of aconite and digitalis in the rabbit and the Guinea-pig, as well as some more exact information as to
the minimum lethal doses of these agents. It was found that the mini-
mum lethal dose of aconitine was about 1-400th of a grain for a rabbit of
1½ lbs.; and 1-1200th of a grain, or less, for a Guinea-pig of the same
weight.

It was considered advisable in the second series of experiments to limit
the inquiry to rabbits, and they were thus instituted with the aid of Dr.
Pairman.

The first series was performed on seventeen rabbits, to ascertain the
minimum fatal dose of aconitine. It was found to be much less than was
supposed, about 1-400th of a grain for a rabbit, weighing 1½ lbs., and
1-800th for one of three pounds.

Experiments with digitaline seemed to indicate that the minimum fatal
dose was about a grain to the pound of body weight of rabbits.

The simultaneous administration of the digitaline did little or nothing
to modify the effects of aconitine, but if given a long enough time before
(from 4 to 9 hours) it afforded a decided protection. The effect of less
than the lethal dose of aconitine upon a fatal dose of digitaline was to
hasten the fatal event. This result was in accordance with what was
found by Fraser when testing the antagonism of helladonna and Calabar
bean. Atropia in moderate doses given a few minutes previous to the ad-
ministration of aconitine, was found to decidedly modify its effect, and the
same was found to be the case when it was subsequently given, while the
reverse was found not to be the case, small doses of aconitine not modify-
ing the effects of lethal doses of atropia. In atropia we therefore possess,
according to these experiments, an antidote to aconitine, but the relation
is not a reciprocal one.

Electricity.—Dr. A. S. Myrtle read a paper at the British Medical As-
sociation in August last, (rep. in Brit. Med. Jour. Aug. 25) in which he
stated that he had found the current from five to twenty cells of the Le-
clanché battery of great therapeutic value in many forms of superficial
neuralgia, and especially in those cases where the pain had a decided
fixity in its nature, such as migraine, intercostal neuralgia, neuralgia of
certain groups of muscles, such as the pharyngeal and laryngeal, accom-
panied with great difficulty in swallowing and breathing; of the abdominal
muscles, accompanied with such intense pain in assuming the erect pos-
ture, or in walking, as to render the patient unable to do either for even a
very short period without intense suffering. For the relief of neuralgic
pain in more deeply seated nerves, such as the lumbar and the sciatic,,
thirty or forty cells are required. In most cases, the nerves affected are
far less sensitive to the faradic current than the healthy nerve is; and as
far as Dr. Myrtle's observation went, it matters little how the poles are
placed so long as the affected nerve is made a part of the chain through
which the electric current passes. In no case ought the current to cause
pain, but a mild tingling or pricking; and when the skin is tender or
thin, it should not be kept applied to the same spot for more than for a
very few minutes (two or three) at a time, else a crop of angry pustules
will put in an appearance. A few applications are of no use, as this agent must be employed daily for from five to fifteen minutes, and regularly, until the pain is entirely subdued. In spasmodic asthma he had met with great success from the use of the constant current. He had seen in ten minutes the respirations reduced from thirty-eight in the minute to eighteen, with complete relief to all painful symptoms. Here he had never found it necessary to make use of more than ten to fifteen cells, and had applied one pole to the par vagum in the neck, and the other over the eighth intercostal space.

**NARCEIA AND CODEIA.**—The works of M. Claude Bernard have demonstrated that narceia is the most sleep-producing substance in opium. Nevertheless this substance is but little used in therapeutics, and it is for the purpose of bringing to light its properties that M. Barnay has undertaken his comparative researches on the usage of this alkaloid, as well as that of codeia and morphia (*Brochure 8 vo. 60 pp*.). According to M. Barnay, narceia ought to take the first place among the alkaloids of opium; it results, in fact, from his experiments that it acts especially as a hypnotic, that it produces a slumber similar to normal sleep followed by an absolutely normal awakening, that it does not produce nausea, vertigo, or hebetude, like morphia, that it does not cause itching of the skin or convulsions, like codeia. The toxic power of narceia, inferior to that of morphia, is especially less than that of codeia. Finally, beside its hypnotic qualities, narceia possesses, according to M. Debou, a happy influence on chronic bronchitis; it diminishes the cough and modifies the expectoration. M. Behier, on his part, has seen it constantly ameliorate the general condition of consumptives, as well in diminishing the cough and the expectoration, as in arresting the diarrhea. M. Laborde has obtained the same results in phthisis, and by its employment has favorably modified the progress of whooping-cough. The only inconvenience charged to it is that in certain cases it has caused difficulty in the emission of urine. It may be administered like morphia, either hypodermically or by way of the stomach (we would remark, nevertheless, that the authors of the *Traité de Thérapeutique* of Trousseau and Pidoux recognize no advantage in the hypodermic method of administration, on account of the slight solubility of the substance). Only one difficulty in its employment appears; up to the present time the pharmacies are not generally provided with narceia, but whenever physicians decide to give it the place it merits in therapeutics, this difficulty will disappear of itself. As to codeia, its convulsant properties are such, according to M. Barnay, that it ought to be excluded from therapeutics; one fact interesting to know is that up to a certain dose, rather high, moreover, it appears to be not dangerous, but if that amount is passed in the slightest degree, even one or two milligrammes, \(= .015 \text{ to } .080 \text{ gr.}\) the convulsive accidents may appear all at once and cause death. *Journal de Med. et de Chirurgie Pratiques*, August.

**aconitine in cardiac disease and neuralgia.**—M. Gubler says in the *Journal de Thérapeutique*: The cardiac disease was so marked in a young
woman with organic disease of the heart after a small dose of aconitine, in my clientele, that she prayed to have the medicine stopped. Liegeois and Hottot have already demonstrated in aconitism paresis of the heart and paralysis, from the action of the alkaloid. Under whatever form we employ it, as the amorphous aconitine, or the crystallized azotate of Duquesnel, it is a medicine difficult to manage, and we should use it with care.

It is better to give it in solution than in granules, as the latter are often inactive, and we are tempted to increase the number, owing to the seeming insensibility of the patient to the medicament. By using the solution, owing to its certain absorption we avoid the danger of the accumulation of the poison, and we should begin with half a milligramme, progressively increasing the dose if necessary, as some patients bear even six milligrammes. I have never seen any bad results from its employment if it is given with care and in therapeutical doses.

Its disadvantages are nothing compared with its benefits.

In facial neuralgia its practical importance is very great, and it may be looked upon almost as a specific.

In neuralgia of the fifth pair, and even in tic douloureux I have never known it fail, and I may mention two severe cases of facial neuralgia which yielded completely to the use of the azotate in progressively increasing doses.

The alkaloid is principally recommended in the congestive form of facial neuralgia; its effects are curative when there is no nervous lesion—palliative when the lesion is established. I am of opinion that all neuroses end by giving place to nervous alterations.

Aconitine, when given in the beginning, will completely cure facial neuralgia, and in those cases where the disease is advanced it will immediately afford relief; but unfortunately this action does not extend to other forms of neuralgia. Med. and Surg. Reporter, Aug. 25.


Experiments with strychnia on dogs, rabbits, and birds, afforded the author the following results.

1. Strychnia acts, when introduced directly, into the stomach or the small intestine, much more slowly than per os or rectum.

2. The action of this poison is at least fifteen times slower when injected into a vein of the portal system than when introduced into a vein not opening into the portal circulation.

3. This slower working of strychnia, when introduced directly into the stomach or small intestine, and when injected into the portal circulation, depends upon a property of the liver to retard its poisonous effects.

4. In rabbits and birds, contrary to the case in dogs, the poisonous effects of strychnia were manifested more quickly when it was introduced directly into the stomach, than when given by the mouth.
Ditain.—E. Harnack, Arch. f. exp. Path. u. Pharm. VII. 128, 1877.

The bark of Alstonia scholaris, a plant of the order Apocynaceae, and indigenous in Java, the Phillipines, East Australia, etc., has been much employed in the countries where it grows by physicians and natives, as a tonic, vermifuge, and antipyretic. Harnack isolated from it a glycoside basic precipitated by acetate of lead and ammonia, which he called ditain.

When injected into the dorsal lymph-sack of the frog, in the dose of five milligrammes, (—.075 gr.) the chlorate of ditain produced spinal paralysis, and (like curare), paralysis of the motor end apparatus of the nerves. The inhibitory fibres of the vagus were also involved. The action of chlorate of ditain on the heart is antagonistic to that of muscarine. The inhibitory peripheral terminations of the vagus irritated by muscarine, are paralyzed by ditain. In rabbits a much larger dose is required to produce with certainty the paralysis of the terminal motor apparatus.

Ditain acts in mammals altogether similarly to curare—except in that the paralysis of the vaso-motor nerves is of a much higher grade from ditain than from curare.

Pilocarpine.—At the session of the Soc. de Thérapeutique, July 11, (rep. in Bull. Gen. de Thérap.), M. Dujardin-Beaumetz reported that he had had good results from the use of pilocarpine by hypodermic injection in doses of two centigrammes; employing a solution of 1—50; but he believed this dose ought not to be exceeded; there is reason to fear that in higher doses this alkaloid may give rise to the very severe cardiac disturbances observed by MM. Gallois and Hardy in their experiments upon animals. It is advisable, therefore, not to follow the indications formulated by Adolphe Dumas in his thesis, who advised the administration of pilocarpine in the dose of five centigrammes.

With the dose of two centigrammes the perspiration and salivation are very considerable without the production of the symptoms of nausea always met with in the administration of jaborandi.

M. Constantine Paul agreed with M. Dujardin-Beaumetz, and thought that the diaphoretic effects of pilocarpine might be obtained with very small doses (a few milligrammes). When we exceed one centigramme, we have salivation and the stomachal fatigue.

Bromide of Cadmium.—At the session of the Soc. de Biologie, Aug. 4, (rep. in Gaz. des Hopitaux), M. Galippe reported that, on account of a case in which bromide of cadmium had been given instead of bromide of potassium, and had caused some rather serious symptoms, he had undertaken a series of experiments upon animals with the idea of determining the physiological effects of this body. A very small quantity of bromide of cadmium administered to frogs by sub-cutaneous injection very quickly
produced paralysis and death of the animals. Administered to a dog, by the stomach, bromide of cadmium caused vomiting, bloody diarrhea, and profound depression, but no other serious accidents.

Influence on Respiration of Injection of Chloral into the Heart.—At the session of the Soc. de Biologie, July 28, (rep. in Gaz. des Hopitaux) M. Francois Franck gave an account of his experiments on the respiratory arrest produced in animals in which a concentrated solution of chloral had been injected into the heart.

These arrests are dependent on the contact of the irritant solution with the endocardium; they are produced, in fact, before the liquid has had time to be diffused in the general circulation, as is proven by the introduction of the substance directly into the right auricle.

They are independent of the arrest of the heart, since they are produced when we have suppressed the cardiac troubles with atropine.

The respiratory arrest follows in virtue of a reflex act, the point of departure of which is in the sensory fibres of the endocardium. These centripetal fibres are contained in the pneumogastric; the section of the depressor and sympathetic nerves, and of the cervical and cranial anastomose demonstrates this.

M. Franck recalled the fact that respiratory arrests were produced by sudden and intense excitations of all the sensory nerves, and that particularly in the sphere of the pneumogastric, the laryngeal and pulmonary fibres are frequently the point of departure of identical reflex disturbances (exp. of P. Bert, Rosenthal, Jolyet, etc.). These sensory fibres of the endocardium ought not, therefore, to be considered as special nerves; they put the cardiac function in relation with the respiratory function, but they also form part of the great group of sensory nerves, the excitation of which can cause, in a reflex way, respiratory arrests, comparable with these in all particulars.

Salicylic Acid.—The following is the substance of the concluding therapeutic summary of an article by Prof. Germain Seé running through several recent numbers of La France Médicale.

1. As an external antizymotic medicament salicylic acid has an incontestable action, but does not surpass in this respect phenic acid, and possesses over it no advantage except that of being odorless. As an internal antiseptic it has no appreciable effect, either in purulent affections or in contagious parasitic ones, such as diphtheria or thrush, or in gangrene, or finally, in diabetes.

2. As antipyretic medicines, salicylate of soda and salicylic acid possess transitory and dubious properties, even as against the specific, miasmatic, and virulent fevers, etc., thus it has no marked superiority over the sulphate of quinine; the salicylate of quinine itself cannot yet take any definite rank in the therapeutics of the palustral fevers. Without power
in the cure of variola, the salicylate of soda has not yet given proofs of its efficacy in the treatment of typhoid; its febrifuge power is very limited.

3. It is in acute articular rheumatism that we observe the surest and promptest effects, so indeed that we can almost at once predict a cure of acute febrile or apyretic rheumatism within from two to four days; 51 cases in evidence.

4. In simple chronic rheumatism the trials I have instituted were very satisfactory; also in the acute crises which manifest themselves from time to time, either in the form of simple rheumatism, or even in that of nodular arthritis, the painful attacks cease as soon as in the case of acute rheumatism. More than this, the articular engorgements diminish to a considerable extent, and the movements may become free, even after years of pain, rigidity and immobility, on condition only that the osseous lesions be not too advanced and serious, (eleven observations of chronic rheumatism cured or ameliorated).

5. But it is in acute and chronic gout that the results are most remarkable; in my first trials I was struck with the promptness with which the most painful acute attacks were relieved, in the course of from two to three days the pain, the articular hyperemia, the redness, the sensitiveness to touch, had all disappeared.

Chronic gout does not take less kindly to the salicylic acid treatment. By its continuous use, even in moderate doses, the patients are absolutely protected from acute attacks.

On the other hand, the chronic peri-articular engorgements readily disappear, the tofacose deposits of the joints diminish and cease to inflame. In a word, the cure may be complete without producing any metastasis to the heart, the stomach, the respiratory organs or the brain; in no case out of twenty-one which I have been enabled to follow out, was there the least tendency to retrocession of the gout toward the internal organs.

No other inconveniences were experienced than the development of trouble of hearing and sometimes a certain degree of feebleness or of narcotism; these two last disappeared with the decrease of the dose, the disorder of audition was rather more persistent.

Among the affections, often of a gouty nature, we may mention the gravel, which is very favorably modified or rather is very easily eliminated by the aid of salicylate of soda, which has the further advantage of calming the nephritic pains.

6. The salicylic treatment seems to advantageously modify certain facial neuralgias, but this action is not definitely established; the same is the case with the treatment of sciatica by this agent.

7. In painful affections of the spinal cord, salicylate of soda produces calmative effects, very clearly appreciable; but with the continuation of the treatment a certain degree of weakening may result.

M. Laborde, in response to this assertion of M. Seé, "The cutaneous and general sensibility is not modified under the influence of salicylic acid," showed to the Soc. de Biologie, July 28, (rep. in Gaz. des Hopitaux) a dog into the femoral vein of which he had injected, twenty-four hours previously, four grammes of salicylate of soda, and which presented a profound
and absolute anesthesia of the whole cutaneous surface. In opposition to M. Séf, therefore, M. Laborde believed that he could affirm that salicylic acid possessed analgesic properties.

**Verspernum.**—M. Bochefontaine, at the session of the Soc. de Biologie, (rep. in *Le Progrès Medical*) July 21, read a communication on some physiological experiments upon the action of verspernum, a plant used as a febrifuge in Brazil. Its alkaloid paralyzes the central nervous system and destroys the excito-motor power of the cord.

**A New Therapeutic Agent from Ergot.**—Podwioszk, *Voenna-Medizinski Journal*, June, 1877, (Abstr. in *St. Petersburger Med. Wochenschr*, Aug. 27, Sept. 8,) has been able to isolate a substance from ergot which, from its slightly acid peculiarities, he calls sclerotin acid. It is without taste and odor, and almost colorless, readily soluble in water and dilute alcohol, but is precipitated by 85 per cent. to 90 per cent. alcohol from the watery solution, unites with lime, potash, soda, manganese and silica; after maceration with hydrochloric acid and gradual addition of absolute alcohol we obtain it almost entirely free from inorganic substances.

It forms from three per cent. to four per cent. of ergot. It can be obtained in small masses, like lactucarium, or in the form of powder. Two to four centigrammes, (=.030 to .000 grain) hypodermically administered to frogs, produced complete sensory and motor paralysis, the heart's action continuing, but very weak. After six or seven days, either recovery slowly occurred, or death followed in convulsions. Prof. Holst repeatedly injected subcutaneously four to five centigrammes of this substance in cases in the gynaecological clinic at Dopat, and observed as consequences neither pain nor inflammatory processes. These peculiarities, as well as the ready solubility in water, render this substance preferable to the commonly employed ergotin. Besides sclerotin acid, another similar substance, scleromucin, was obtained from ergot, but thus far it has not been isolated from inorganic matters; and being insoluble in water it is not therapeutically applicable. Two coloring matters and an indifferent substance were also isolated.

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