nerve produced the ordinary inhibitory results, the heart being brought to a diastolic standstill, and resuming its beat afterwards on the cessation of the stimulus.

In the frog, the slowness of the heart's beat was carried to actual stoppage, the heart remaining motionless and distended in diastole. While the animal was in this condition, the injection of atropine brought back the rhythmic beat.

We may infer from this, that the action of jaborandi (like physostigmin) in rendering the heart's beat slow, is through stimulation of the inhibitory fibres of the pneumogastric. The jaborandi, however, apparently, while exciting, does not rapidly exhaust the inhibitory fibres.

An attempt was made to recall in a frog, by the injection of jaborandi, the inhibitory power of the pneumogastric nerve, which had been suspended by the action of atropine. This, however, failed.

In the dog and the rabbit, this slowness of the pulse-rate was accompanied by a fall of blood-pressure, distinct, but not of any very great extent, coming on rapidly; in the case of one rabbit, causing a descent of the pressure-tracing almost imitating the effects of stimulation of the pneumogastric.

If the web of the frog's foot be examined while jaborandi is injected beneath the skin of the back, the arteries are seen to dilate, and the capillaries and veins to become full and red. The rapidity of the flow of blood, in spite of the dilatation, diminishes very considerably, so much so, that eventually a nearly complete, or even quite complete, stasis is observed over the greater part or whole of the web. This may be seen not only when the heart is at a standstill, but also when it is beating as rapidly as twenty times a minute. When the heart is revived by atropine, the stasis gives way, but only partially, and a very slow imperfect circulation is set up again. This same stasis was observed both when the sciatic nerve was left intact, and when it had previously been divided. Speaking under all reserve, and in view of future observations, I am very much inclined to believe that the stasis cannot be wholly due to the action of the jaborandi on the heart and vaso-motor nerves, but that a direct influence, of some kind or other, is exerted.

Injected into the jugular vein of a rabbit in which the sympathetic nerve of one side had been divided, jaborandi caused first of all a contraction of the vessels of the ear on the side where the nerve had been divided. This contraction was followed by a dilatation. A second injection caused a second contraction, succeeded again by dilatation. Under the full influence of jaborandi, stimulation of the divided sympathetic caused contraction of the vessels and pallor as usual.

After the injection of jaborandi, the vessels of the ear on the side on which the sympathetic was intact were dilated, but apparently not to the same extent as on the other side.

Paralysis of the normal vaso-motor influence does not, then, seem to be one of the most prominent characteristics of jaborandi.

The tracing of the blood-pressure was remarkable for the great flattening of the respiratory curves, a flattening which could not be explained by changes in the respiratory movements. This change in the respiratory curves, added to the bold pulse-curves of the slowly-beating heart, gave very distinct features to the tracing.

3. *Effects on Secreting Organs.*—In the dog and rabbit, very soon after the injection of jaborandi, a thick viscid mixture of mucus and saliva dropped from the mouth. A clear fluid ran from the eyes and nose. When a cannula was placed in the submaxillary duct, a flow of saliva, having the characters of chorda-saliva, took place very soon after the injection of jaborandi. The secretion speedily reached a maximum, and then declined. This excitation of the gland was but little, if at all, affected by previous division of the chorda tympani, and it was, therefore, peripheral in its mechanism. After the injection of jaborandi, electric stimulation of the chorda tympani caused an increased secretion, but quite out of proportion to the flow caused by a similar stimulation before injection. In fact, the jaborandi appeared rapidly to exhaust the gland.

In the frog, jaborandi caused a viscid secretion from the mouth and from the whole surface of the skin. Division of the sciatic produced no marked effect on the secretion from the skin of the leg; but this point also requires closer examination.

In the dog, there was found, after death, a large quantity of mucus in the trachea and bronchi, and a considerable amount of acid fluid in the stomach.

Jaborandi apparently increases the peristaltic action of the intestines, and in some way affects the urinary apparatus; but on these points, as also on its influence over the eye, the liver, and the secreting powers of the kidney, I have as yet been unable to make any precise observations.

In conclusion, I would point out that jaborandi in many points is similar in its action to physostigmin, but yet has distinct characters of

its own; that its action on the heart may be regarded as indicative of the care with which it should be employed therapeutically for the sake of its other qualities; and that its effect on secreting tissues—for example, the skin—and its peculiar action on the general circulation, present physiological problems of very great interest. To these I hope to be able before long to return. Of course, an isolation of the active principle, or of the active principles—for there may be more than one—is much to be desired.

EXCISION OF THE UPPER HALF OF THE FIBULA WITH A CARTILAGINOUS TUMOUR.

By THOMAS ANNANDALE, F.R.S.E.,

Surgeon to the Edinburgh Royal Infirmary, and Lecturer on Clinical Surgery.

A. D., AGED 30, was admitted under my care on March 17th, 1873. Four years before, the patient had a cartilaginous tumour removed from the upper part of the fibula; but none of the bone was taken away, the growth being simply torn from its attachment to it. The part remained well for about two years; but after this the growth returned, and continued gradually to increase in size.

An examination determined the existence of a tumour as large as an infant's head, firmly attached to, and evidently growing from, the upper half of the fibula. It was firm to the touch, somewhat lobulated, and projected principally inwards towards the popliteal space and calf of the leg. There was a cicatrix near the head of the fibula, the result, we were told, of the old operation. At first sight, amputation of the limb appeared to be the only method of successfully removing the tumour; but, after taking into consideration the nature of the growth and the site (the fibula) of its origin, I thought it might be possible to take it away thoroughly by excising the portion of bone from which it grew. The operation would necessitate the taking away of the entire upper half of the fibula; and two risks required to be avoided: (1) injury to the knee-joint in disarticulating the head of the bone; (2) injury to the popliteal vessels and nerves.

With these points in view, I undertook the operation on March

21st. The superficial aspect of the tumour was first exposed by a longitudinal incision about six inches long, made on the outer edge of the fibula, and by a shorter transverse one passing inwards across the calf at right angles to the centre of the first. Portions of several of the muscles were adherent to the growth, and required to be dissected off or cut across. The posterior tibial artery ran along a groove in the

lower part of the growth; and, as it could not be separated, it was ligatured and divided. The posterior tibial nerve was dissected away from the tumour, and left uninjured. The fibula was now sawn through about its centre; and its upper half, together with the growth, being laid hold of, it was drawn outwards, so as to allow some of the deeper portions of the tumour to be easily separated, and disarticulation of the head of the bone accomplished, with the least risk of injury to the knee-joint. By this means, the entire growth was surely removed; and, the edges of the wound being brought together, antiseptic dressing was applied. The tumour, when examined, was found to be growing from a little more than the upper third of the fibula. It was a good example of the cartilaginous growth; and, when the adherent textures had been dissected from it and the portion of the fibula to which it was connected, it presented the appearance figured in the illustration. From the close connection of the tumour to the fibula, it was very evident that no operation short of the removal of this bone could have been successful in taking away the whole disease.

On the 23rd, it was reported that the patient's progress was most satisfactory. On April 2nd, the report was, that the wound was rapidly contracting, and the general health excellent. On April 27th, the patient rose for the first time, using crutches. On May 8th, he was able to walk round the ward without support. The wound was very nearly healed, and was quite superficial. On May 12th, the patient left the hospital with a most useful limb. He could move the knee-joint freely, and bear good weight upon the legs.

REMARKS.—The satisfactory result of this case is an addition to the successes of conservative surgery. The non-malignant nature of the tumour, the history of its exact place of origin, and the secondary part which the fibula takes in connection with the support of the leg, were the circumstances which encouraged me to operate in the present case. The dissection of the fibula at an early stage of the operation was found to be a great assistance; for it permitted the tumour to be drawn away from deep and important structures, and thus diminished much the risk of injury to them during the deeper dissections.

CLINICAL MEMORANDA.

CASE OF POISONING BY HOMŒOPATHIC SOLUTION OF CAMPHOR.

THE case of camphor-poisoning related by Dr. George Johnson in the JOURNAL of the 6th instant, has induced me to look up my notes of a case that came under my observation about fourteen months ago.

Last winter, a young lady about twenty years of age, who generally enjoyed good health, while dressing about half-past seven to go out to an evening party, became very giddy and unwell. She went into the next room to her sister; said she felt very ill; threw her arms around her, and was immediately seized with strong convulsions. I was sent for; but, not being at home, she was seen by Mr. Armstrong. The convulsions had passed off. In about a quarter of an hour, there was free vomiting, and the patient remained unconscious for some time longer. I was requested by a second messenger to see her as soon as I came home. I did so a little before eleven. She complained at that time much of headache and giddiness, and was evidently confused. Her pulse was quick; skin moist. Her father told me down stairs that she had had an epileptic fit. I expressed my unwillingness to believe it was a case of epilepsy, until I failed to discover that it originated from some other cause. At the request of her parents, I visited her again in two hours—about half-past 1 A.M. Having had some sleep, she seemed more comfortable, and was decidedly clearer mentally. After much conversation and inquiry, which did not elicit anything of importance bearing on the illness, when I had almost despaired of gaining any further information, her mother told me that the only thing her daughter had taken that evening after dinner was a few drops of camphor while she was dressing, for a slight cold in the head; and "that of course", she added, "could not make her ill". I thereupon expressed a wish to see what remained. A half-ounce bottle was produced, more than half-full, labelled "homœopathic solution of camphor", with the name of a respectable firm. There was no intimation of the dangerous potency of the drug. It was bought, I was informed, because it was considered good for a cold; and many ladies took it for that reason. The lady said, moreover, that as it was a *homœopathic* preparation, she never doubted its being a safe one. I dropped fifteen drops (which was admitted by the patient to be about the quantity taken) into a tumbler with a wine-glassful of water, when a large deposit of camphor took place. The previous perusal of Dr. George

Johnson's and Dr. Clifford Allbutt's striking and instructive cases of poisoning by this strong solution enabled me at once to assure the friends of the patient that it was a case of camphor-poisoning, and that there would be no recurrence of the attack if the dangerous medicine were at once discarded from domestic use.

It is worthy of remark, that, while chemists carefully label laudanum in small quantities "poison", they do not hesitate not only to sell a drug considerably more deadly in its character to anybody who asks for it without any intimation whatever as to dangerous properties, but rather mislead the public by using an adjective which, in former years at least, was associated with everything innocuous and absurd.

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POISONING BY HOMŒOPATHIC TINCTURE OF CAMPHOR.

READING, in the BRITISH MEDICAL JOURNAL of February 6th, Dr. George Johnson's statement of cases showing the poisonous effects of the homœopathic solution of camphor, I was immediately reminded of one which occurred on the evening of Christmas-day. I was sent for to see a young man who had suddenly fallen down insensible. On reaching the house, he had recovered, and was seated on a chair, looking pale, and with a weak pulse. A small half-ounce bottle was shown me, labelled "mother tincture of camphor". He said he had been accustomed to apply two drops at a time into a decayed tooth for tooth-ache; but, not finding relief, had repeated and increased the quantity several times on the present occasion, when suddenly, surrounded by a party of friends, he fell down insensible. Not being then aware of the strength of these homœopathic solutions, I attributed the effects to sudden fear lest he should have overdone the thing. After lying for some minutes unconscious, his friends told me he gradually came round. He had emptied the contents of the bottle. How much it contained, I cannot say. The young man was in good health, had walked two miles to visit his friends, and was going to walk back.

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CHILL OR MALARIA.

THERE appears to be considerable difference of opinion just now as to the cause of ague, whether it is due to malaria or produced by a chill. I live between two tidal rivers, the Cuckmere and the Ouse (Sussex). The inhabitants of the villages on the eastern banks of these rivers are very subject to ague, especially in the spring; so much so, that two clergymen and several tenants of the farms are unable to live in their parishes. I was some time since on a visit to the Rector of Waldron, a parish fifteen miles from here, situated on high table land with a dry sandy soil. My friend informed me that he had never seen a case of indigenous ague, but that several of his parishioners go down into the valleys of those tidal rivers in August during the harvest month, return home perfectly well, but in the following spring many of them are attacked with ague. On the contrary, those who migrate to the hop-gardens of Kent to assist in hop-picking, although they go a month later, and are, in consequence, exposed to more cold and wet than the harvesters, escape scot free. These are, I think, conclusive proofs of the agency of malaria in the manufacture of intermittent diseases, and that the "chill theory" is fallacious.

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CURIOUS CASE OF OVERLOOKED STRICTURE OF ŒSOPHAGUS, AND POSTPHARYNGEAL ABSCESS.

A WIDOW, advanced in years, poor, but far from destitute, was transferred to my care in July 1873, as an old standing case of debility, with a character for grumbling. The treatment adopted had been various, the most efficacious as tested by her complainings—allowance of extras from the parish. In 1872, I find her ordered mutton and cod-liver oil, and returned as having debility; and had I earlier books, we should find similar entries for ten years or more. When I visited her, she was sixty-three years of age; lean, sallow, with a somewhat full throat, and a tongue and pulse not calling for notice. She was full of complaints: amongst them, of her throat (pointing to the enlarged thyroid gland). I gave her "extras", and returned her "debility"; and sent her a *placebo* mixture. Matters ran on without any suspicion of her disease until about July 1874, when she began to complain of difficulty in swallowing. I directed her to drink some water in my presence, and she drank it far better than she would have led me to suppose she could; but yet, as it seemed to me, with an effort—