man who had fits affecting the *right* arm. In this case there was a tumour in the hinder part of the first (uppermost) frontal convolution of the left hemisphere. (There was also a tumour in each lateral lobe of the cerebellum, to which I traced no symptoms.) I did not see this man in a fit; his arm was paralysed after the first seizure.

Lately I was allowed by Mr. Soutter to see a patient of his who had literally innumerable fits limited to the right arm. Mr. Soutter witnessed many; I saw several. The spasm passed down the arm except in the later fits, then it passed up. Shortly before the patient's death she had, Mr. Soutter tells me, universal convulsion. Here I correctly predicted disease of the hinder part of the first (uppermost) frontal convolution—not from physiological knowledge, but because of what I found in the other case just mentioned. Once more I ask, What would be the homologous series of convulsions from the artificial excitation of the homologous parts in a series of animals lower and lower in the scale?*

SYMPTOMS OF IRRITANT POISONING FROM PORK BRAWN.

By EDWARD MACKEY, M.B.,

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CASES similar to the following deserve record, because they have a medico-legal interest, and may be required for reference and precedent.

On January 4th last, at Hampton-in-Arden, sixteen persons, including men, women, and children, aged from five to seventy-eight years, were suddenly attacked with violent vomiting and purging, accompanied in most cases with general and severe muscular cramps, soreness of eyes, and sense of burning and constriction in the throat. Mr. Adkins of Meriden (who favours me with these details), and Mr. G. W. Tait of Knowle, were with the sufferers for the greater part of the day and night. Some seemed to be in serious danger; but, under appropriate treatment, all were convalescent next day. It was found that all had eaten some "pork brawn", and had begun to suffer two or three hours afterwards. All who had eaten any suffered more or less. The brawn had been bought from one provision-dealer in the village, a respectable man who could give no reason for its bad effects. He had eaten a little of it (perhaps two ounces), and had thought it particularly good. Of eighteen pounds made, six had been sold; the rest he himself gave into the custody of the police. Dr. Wade was consulted, and at his suggestion a portion of the brawn was sent to me for analysis. When received, it was mouldy and partly decomposed. Of its original appearance and taste no complaint had been made by any customer, though Mr. Tait informs me it had to him an unpleasant smell, and "nearly all trace of difference between gelatinous and muscular tissue was gone". There was no suspicion of intentional poisoning by the vendor, neither had any copper vessel been used in the cooking; but two rumours had been spread—(1) that the pig had had mercurial ointment applied for foot-and-mouth disease; (2) that, as the furnace stood near a partly open window, some one might have, in malice, thrown in poison. Poisons whose effects would accord with the symptoms are oxalic acid, salts of copper, zinc, antimony, arsenic, or mercury. The reaction was not strongly acid, and the substance had not unusual taste or colour: oxalic acid and sulphate of copper were therefore excluded. Three portions of two ounces each were tested by the process of Reinsch, with negative results. For greater certainty, similar portions of ordinary brawn bought in Birmingham were mixed with fractions of a grain of white arsenic,

* The significance of the fact, that the hand is the part in which convulsions, beginning unilaterally, most often start; that the arm suffers first, or most, or both, in the greater number of motor affections from brain-disease (hemiplegia, chorea, paralysis agitans), will be better realised after reading Herbert Spencer's remarks on lacteal organs, in chap. viii, vol. i, p. 359, of his *Psychology* (second edition), from which I give these extracts.

He points out and shows the significance of the "striking instances which the animal kingdom presents of unusual sagacity co-existing with unusual development of organs, which, by the help of complex muscular arrangements, give complex tactual impressions." After remarking, that it will perhaps be difficult to understand why *touch*, the simplest and earliest sense, should in its higher forms be more than any other sense associated with the advance of intelligence, he says: "The explanation lies in the fact that tactual impressions are those into which all other impressions have to be translated before their meanings can be known." Of the human hand:—"All that we need here notice is, the extent to which, in the human race, a perfect tactual apparatus subserves the highest processes of the intellect. I do not mean merely that the tangible attributes of things have been rendered completely cognisable by the complex and versatile adjustments of the human hands, and that the accompanying manipulative powers have made possible those populous societies in which alone a wide intelligence can be evolved. I mean that the *most far-reaching cognitions, and inferences the most remote from perception*, have their roots in the definitely combined impressions which the human hands can receive." [No italics in original.]

The study of cases of disease of the nervous system appears to me to supply continual illustrations of the correctness of many of Spencer's deductions.

tartrated antimony, and corrosive sublimate respectively, and readily gave evidence of these poisons with the same test. Marsh's hydrogen test was then used, with results equally negative as to the suspected brawn, and equally positive as to the brawn which was purposely mixed with antimony and arsenic. Sulphuretted hydrogen, passed for some hours through an acid solution, did not produce any precipitate—an additional evidence of the absence of copper as well as of the other poisons. Sulphate and chloride of zinc were tested for separately, and neither found. Under the microscope, portions of the muscular tissue appeared normal, and without trace of parasite. There was, therefore, no tangible poison in the suspected brawn. Did the symptoms arise from formation or decomposition of fatty acids during boiling?

The mode of its preparation was as follows. A pig, said to be quite sound, was killed on Wednesday; the ears, snout, feet, and some of the flesh and viscera, were put on Thursday morning into an iron furnace partly covered with a wooden lid, and were boiled with salt and spices till night; the fire was then let out, the meat left to grow cold, and then boiled again all Friday. On Friday evening it was "turned out" to cool, and cut up for sale on Saturday morning.

Why did this particular quantity cause bad effects when the man had prepared, apparently, similar brawn safely twenty times before? Inquiry into differences in preparation gave the following answers.

1. *As to Time*.—He had never before boiled any so long as this: he could not say exactly his usual time, but it was generally till the flesh came off the bones. He had never before let any grow cold all night and be re-boiled next day.

2. *As to Vessel*.—He had never before used his iron furnace for this purpose, but always an iron pot boiled over his kitchen fire. The furnace had been commonly used for boiling clothes: this time it had been also used for "rendering" lard for about an hour before the brawn had been put in; it had not been cleansed from the lard; had never prepared lard before in the same vessel as the brawn. Soda had not been used when the clothes were boiled, and the lard prepared just before the brawn was sold and used without any complaint.

These answers contain, I believe, whatever explanation can be given of the unfortunate results. I regret that the state of the material when received by me, a fortnight after the occurrence, vitiated any results obtainable from alcoholic extracts, as prepared by Buchner and Schumann in their researches on the sausage-poison (*vide* Christison *On Poisons*, p. 640). I certified to the absence of mineral poison and to the probability of formation of acrid fatty acids—a suggestion previously made by Dr. Wade.

It may be observed, in conclusion, that the dealer will never attempt brawn-making again, "for he suffered so much in his mind". His customers were considerate towards him, and no legal proceedings arose. Somewhat similar cases might not always end with as little mischief.*

THE INVALID CRANE OR BED-HOIST: A NEW APPARATUS.†

By EDWARD ATKINSON, F.L.S.,

Senior Surgeon to the Leeds Public Dispensary.

IT not unfrequently happens in private practice that paralytics and other helpless persons who are long confined to bed, and whose bulk makes it a difficult matter to change their position, consult their medical attendant as to whether some means be not available for saving the labour of lifting, etc. Nor is it to the patient alone a matter of concern; for what surgeon is not familiar with instances where overstrained spinal or uterine ligaments, entailing life-long sufferings, are traced to a devoted attendance upon some heavy invalid parent or friend—perhaps daily, for months or years? Two or three such cases having lately occurred under my own observation, I became anxious to meet the difficulty, and projected several designs, but was never satisfied with any of them until I secured an ally in a relative of one of my patients, himself an engineer. The result of the apparatus which we have had constructed is so completely satisfactory that I am induced—having my friend's full permission for so doing—to communicate the accompanying description and drawings of it for the benefit of the public, and more especially of any surgeon who may be in need of such appliance. I may premise that the total cost did not exceed £10, of which sum the pair of patent pulleys alone cost half.

The invalid crane, as I propose to call it, is a modification of the Goliath travelling crane used in timber-yards and elsewhere, and con-

* Since the above has been in type we have the report of a fatal case, apparently of meat-poisoning, at Arbroath. A careful and rigid inquiry is to be desired.

† Read before the Leeds and West Riding Medico-Chirurgical Society.

sists of three principal parts—viz. (1) a double tram, (2) a travelling pulley on each tram, and (3) a strongly webbed hammock.

The trams are placed about two feet ten inches apart, and are six feet six inches long. Each consists of a stout bar of wrought iron, with a squared section of two inches vertical and half an inch transverse diameter. The bars are bent at right angles, on the flat at each end, where they are firmly secured by nut-screws into the joints, leaving a space of three inches between the horizontal tram and the ceiling.

Depending from the bar is a Y-shaped hanger, consisting of flat iron straps which clasp the bar, with small solid rollers fixed between the same to run on the bar. Upon this hanger is hooked one of "Weston's patent pulleys", which are fitted with endless chains instead of ropes, and which possess this advantage, that the chain locks itself at every pull, and thus saves any strain upon the person pulling.

The hammock, which should be somewhat longer than the height of the patient, is made of double ticking or of stout sailcloth, and strength-

ened by bands of broad webbing, placed six or eight inches apart, and sewn to the ticking throughout. The sides of the hammock are pierced with nine iron eyes, through which pass the hooks of the "crowsfoot" or leash of cords, which are gathered on each side into an iron ring.

As the patient lies in bed the hammock remains spread under him, with a small blanket (and, if necessary, a waterproof sheet also) between. When he is to be taken out of bed the "crowsfeet" are hooked on; and the rings of the opposite sides are connected by an iron bow, similar in construction to a large bucket-handle, with a loop or ring in the centre. These bows are attached to the hooks of the pulleys, and the apparatus is complete.

It is astonishing with what ease and comparatively slight exertion a person weighing eighteen or twenty stone is raised in this manner, run along the tram, and lowered into a chair or couch, without the least jolting or discomposure. I have found it convenient to have two hammocks, so as to afford a change occasionally.

CASES SUCCESSFULLY TREATED BY BROMO- IODINE WATER OF WOODHALL SPA, HORNCASTLE.

By ROBERT CUFFE, M.R.C.S., Woodhall Spa Villa.

CASE I. Chronic Rheumatism.—Notes of this case were supplied by Dr. F. Weber. Mrs. T., aged 50, of full habit, had had six children. Eleven years ago, she became paralytic, in consequence of a fall. She gave birth four months after the accident to a healthy child. She was unable to walk until two years ago. Seven years ago, the catamenia ceased. For the last two years she had been subject to severe rheumatism, suffering with profuse perspirations, and symptoms of abdominal hyperæmia with hæmorrhoids. The left knee and ankle were chiefly affected. In February 1872, the left knee became swollen, hot, and painful; then the right; and for many weeks she was unable to walk. In May last, the left wrist became affected in like manner. When she came to the Spa in July 1872, the left wrist was swollen, and she was unable from pain to use it. The left knee was stiff and swollen, but there was no increase of temperature. Crepitation was perceptible on motion. The heart's action was irregular, but without bruit of any kind. The urine deposited lithic acid and lithate of am-

monia. A Spa water-compress was applied to the wrist, and support and general bath treatment were employed. She left at the end of the month; the wrist was quite restored; she was able to walk comfortably, and was otherwise well.

CASE II. Rheumatism.—The Rev. W. D., aged 71, a martyr to indigestion all his life, had had great mental application for twenty years. He had travelled in pursuit of health, and visited all the foreign watering places. Ten years ago, he had an attack of gout; his mother was gouty. For the past four months he had had neuralgia, and had been unable to dress himself or rise from his chair without assistance. He had been attended by the most eminent physicians here and in Paris; at the latter place, the actual cautery was applied to his shoulder with little or no relief. On his arrival at Woodhall Spa on August 9th, 1870, he walked with the greatest difficulty from muscular pain in both legs. The right wrist was painful, but there was little swelling. He had pain in the right shoulder. The tongue was clean and his appetite very good. The urine was of specific gravity 1018, and deposited lithic acid and lithate of ammonia. He was ordered to have baths at 95 deg., and to drink the Spa water sparingly. On the 15th, he discontinued drinking the water, as it apparently disagreed. The pains were but little relieved. The treatment was continued. On the 23rd, the right wrist was painful, but there was little swelling. He was much improved on the whole. On August 28th, all the pains had disappeared, and he could take long walks without fatigue. On September