An Inquiry into the Action of Mercury on the Living Body. By JOSEPH SWAN. Third edition. Longman and Co., 1847. pp. 34.

THIS is a repetition and continuation of a former investigation by Mr. Swan. His object is, to ally the operation of mercury with the sympathetic nerve, using experiment and post-mortem examination as the means of testing the truth of his hypothesis. The following passage gives the origin of the inquiry:—

"On considering the effects of various preparations of mercury, it appeared that even if they become absorbed, and enter the circulation, or produce their effect by contact with living parts, they affect the nervous system. This opinion was strengthened, in the first instance, by considering the appearances presented in dissecting the sympathetic nerve of a person who seemed to have been under the influence of mercury; for both sides of the face were much swollen; the salivary and absorbent glands were much enlarged; the teeth were loose, and there was a separation of the gums. The ganglia and branches of the sympathetic nerve were found larger than in any previous dissection; there was also an increased size of the par vagum. The other nerves were not enlarged."—p. 4.

In the first two experiments, the mercurial preparation was introduced into the stomachs of dogs; in five other experiments, the mineral was introduced into the jugular vein; and in three experiments, mercurial inunction was performed. In every case, the animals died from the influence of the poison, and according to the observation of Mr. Swan, the ganglia of the sympathetic nerve were uniformly found much injected, and more or less inflamed. Mr. Swan deduces that all the phenomena following the therapeutic exhibition of mercury, such as the increased action of the heart, the increased secretions, &c., are due to the influence it exerts upon the ganglionic system.

Mr. Swan thought it desirable to ascertain whether arsenic also affected the nerves, and details two experiments made with this object. In one, the poison was introduced into the jugular vein of a dog; in the other, it was applied to a wound. In the post-mortem appearances in both cases, changes described by Mr. Swan as abnormal had occurred. In one, "the ganglia of the sympathetic nerve had increased vascularity;" in the other, "the ganglia of the sympathetic nerve were inflamed."

These are important subjects. To determine them correctly, many experiments, most carefully devised, conducted, and observed, would be necessary. There seems, on the part of Mr. Swan, somewhat of haste in induction and generalization.

Medical Societies.

MEDICAL SOCIETY OF LONDON.

MONDAY, FEBRUARY 15, 1847.—MR. DENDY, PRESIDENT.

TREATMENT OF ABSCESS BENEATH THE PECTORAL MUSCLE.

Mr. HILTON had lately met with some cases of deep-seated abscess under the pectoral muscles, resulting from local injury to the thumb, which he had opened in the following manner, to prevent the tedious separation process which followed the evacuation of an abscess, by making an opening from the above downwards. Having examined the axilla, to see that there was no abnormal distribution of the artery, he made an incision abont half an inch deep, and then pushed up a grooved director for two or three inches, until it reached the walls of the abscess at its lower part; by exerting moderate pressure, the point of the instrument was thrust through them, and the matter, at its most depending point, readily and completely evacuated. He had tried the plan, in several cases, with the best success, the recovery being in each case rapid and complete.

Mr. HIRD should prefer, even at the risk of a little hæmorrhage, to use a cutting instrument in the operation; though he thought the best plan would be to cut down upon the pectoral muscle at the lowest point of the abscess, and thus evacuate its contents.

Mr. HILTON had seen the bistoury used in the manner which he had recommended that the director should be employed, and the result was, an alarming, indeed, almost a fatal, hæmorrhage.

EFFECTS OF ETHER, INHALED TO PREVENT PAIN IN SURGICAL OPERATIONS.

Mr. HIRD briefly alluded to the case of a young woman who, having inhaled ether for the purpose of submitting to the extraction of a tooth, was seized with syncope, in which she remained for a length of time, and for ten days afterwards suffered from its effects. This patient laboured under disease of the heart. In another case a gentleman was submitted to the action of ether with the same view as in the former case. Soon after, his face became flushed, his lips purple, his temporal arteries enlarged, and there was altogether so much excitement, that his attendant was alarmed. The tooth, however, was extracted, but convulsions supervened, attended by slight stertorous breathing, and other symptoms of an alarming character. He gradually recovered, but suffered from the effects of the agent for some time after.

Dr. WALLER related the case of a man in whom the ether produced such violent coughing, spitting, contracted pupil, rapid pulse, and incipient convulsions, that it was necessary to desist with the inhalation.

Dr. ROBERTS related a case of asthma, in which the patient, having consulted some advertising practitioner, was directed to inhale a mixture, containing belladonna, Hoffmann's anodyne, and conium, in water at 180°. He pursued this plan for several days, the cough ceased, but the man was prostrated by the remedy; and when he (Dr. Roberts) was called in, he found him in such a state of collapse, that he died in a few hours.

Mr. ALDER FISHER related a case in which this kind of inhalation had produced sudden death in a patient affected with chronic phthisis.

Dr. T. THOMPSON regarded it as a gratifying circumstance, that no death had as yet resulted from the inhalation of ether, though it must have been used already in thousands of instances. It was a great boon to humanity. He regarded the temporary ill effects resulting, in some cases, from its use, to the patient having inhaled his own breath again, and the lungs thereby becoming charged with carbonic acid. Of all stimulants, he regarded ether as the safest, its effects going off sooner than that of any other stimulant.

WESTMINSTER MEDICAL SOCIETY.

SATURDAY, FEBRUARY 13, 1847.—MR. HANCOCK, PRESIDENT.

Dr. SNOW read some

OBSERVATIONS ON THE VAPOUR OF ETHER, AND ITS APPLICATION TO PREVENT PAIN IN SURGICAL OPERATIONS.

He said, that as the vapour occupied space when mixed with the air, it might be supposed that its action was partly due to its excluding a great deal of the oxygen of the air and causing a kind of asphyxia; such, however, was not the case, for he found that supplying the displaced oxygen did not counteract the effects of the vapour. Mixed with oxygen gas it affected mice as powerfully as when mixed with the air, as he had found in several experiments. Asphyxia was a very different state from that produced by ether. Although an animal in a state of asphyxia from breathing air deficient in oxygen, was insensible to pain, as he had ascertained, yet the insensibility was of but short duration, ending soon either in return to sensibility or in death; the production of asphyxia in this way was attended with suffering, and with great danger to life, whilst just the reverse was true of the effects of ether. The latter allowed the blood to be changed from venous to arterial in the lungs, but probably interfered with the changes which take place in the capillaries of the system. He had ascertained that a little vapour of ether mixed with air would prevent the oxidation of phosphorus placed in it, and considered that it had a similar effect over the oxygen in the blood, and reduced to a minimum the oxidation of nervous and other tissues.

In giving ether for surgical operations he considered that the insensibility should be rapidly produced, and that previous excitement ought to be either imperceptible or very transitory. In addition to the state of the eye the character of the respiration afforded a good criterion of the patient's state; when completely insensible, the respiration was deep, slow, and automatic, but should never be stertorous—he had never seen it

so. In full four-fifths of the cases in which he had administered the ether, there was not the least flinch or groan during the cutting by the surgeon's knife. He considered cases of this kind the only truly successful ones, and believed that with proper care nearly every case might be of this nature. When the patient exhibited signs of pain, although he might have no knowledge of it afterwards, the ether was only partially successful. A large number of the so-called successful cases related were of this nature. Cries and struggles could not depend on the reflex function; the patient felt pain; he had sensation, with little or no consciousness, and, consequently, no memory of pain, as memory was the continuance or repetition of consciousness or of knowledge, and not of simple sensation.

With the apparatus on the table,* the patient could breathe a good volume of vapour and air; he usually put it in water at about 70°, when the air and vapour would be equal in quantity, but he allowed the patient to begin by breathing merely air, and turned on the etherized air by degrees, by means of a two-way tap, to prevent the irritation its sudden admission occasioned in some persons; and when the state of insensibility was fully formed, and an operation commenced, he turned the tap to dilute the vapour more or less, and thus to keep up the requisite state of insensibility, without increasing the effects of the ether beyond the necessary degree.

Dr. Murphy had used the ether in a case of turning. The woman was against its application, and after her consent to its use was obtained, she quickly lost consciousness, and was sent to sleep. She had been placed in a proper position for the operation previous to the inhalation. On passing the hand into the vagina, the woman was thrown into a momentary state of tetanic spasm. This was succeeded by a half-drunken, stupid state. He believed, from careful observation, that the uterus was not under the influence of the ether. Delivery was effected in five minutes. The child was "asphyxiated," but soon recovered. Altogether, he believed the woman felt less pain than if the ether had not been used.

Saturday, February 20, 1847.—Dr. Sayer, President.

INHALATION OF ETHER.

Dr. Ayres made some remarks on the mode in which ether when inhaled, produced its effects upon the system. He believed that, like other intoxicating agents, its effects, when inhaled, were identical with those exhibited when it was taken by the stomach, except that the effects were more decidedly and rapidly portrayed. In this way it might act in the manner described by Dr. Snow. He had tried to use the vapour of alcohol for the same purpose, but it produced irritation of the larynx and headach only.

Mr. Brooke laid before the Society an inhaler he had constructed. It consisted of a glass cylindrical vessel, about the size of a pint measure. To the interior of the cap was fixed a portion of a gas-glass, so placed as to stand in the middle of the outer vessel, and to reach nearly to the bottom of it. The inside of the outer vessel, and the inside and outside of the interior cylinder, are coated with lint, saturated with ether. Thus, a large extent of rough surface, the most favourable for evaporation, was contained in a small space. The air entered through valves, between the two outer evaporating surfaces, as the vapour is withdrawn from the inner one, by a tube screwed into the centre of the cap. The double valve is of very simple construction, consisting only of a piece of glass tube, contracted at two points, at which the apertures were closed by balls of wood, producing the usual alternate action.

Mr. Hancock related some cases in which the vapour of ether had been inhaled, with the effect, in one instance, of producing convulsions, and in another, of producing irritation of the throat, which remained until the patient, who was previously in a very low condition, died. After death, the mucous membrane of the larynx and trachea was found congested.

Mr. Hale Thomson regarded the ether as a most valuable boon to humanity. In his own practice he had seen no ill results from it, and thought that we ought not to blame the agent, when the failures might depend upon the manner in which it was administered.

Mr. Norman had seen the ether exhibited to an infant eight months old, who had a nævus removed successfully whilst under its influence. It was administered by sprinkling a little ether on a handkerchief, and holding it before the mouth and nose of the little patient.

Mr. Clarke had seen Dr. Snow's instrument used on many occasions: it possessed the great advantage over all others which he had seen employed, of producing insensibility more rapidly and without the previous excitement which often accompanied the use of other instruments.

Dr. Chowne spoke at some length on the subject, and cautioned the members respecting its use. Our knowledge regarding it was at present but limited, and great care was necessary in our future investigations to discover its real value.

Dr. Snow said, that since he read his paper at the previous meeting, he had completed some experiments, by which he had ascertained that the vapour of ether was given out again from the lungs unchanged, and that the amount of carbonic acid gas produced during the inhalation of ether was less than at other times: these circumstances he considered confirmed the explanation of the *modus operandi* of ether which he had previously given.

The discussion was adjourned.

* Described at page 130 of the present volume of The Lancet.

PATHOLOGICAL SOCIETY OF LONDON.

Monday, Feb. 15, 1847.—Dr. Williams in the Chair.

Dr. Ogier Ward exhibited a specimen of

NECROSIS OF THE SHAFT OF THE HUMERUS, AND OF THE HEAD OF THE FEMUR.

The patient, a girl aged ten, came under the care of Dr. Ward in August, 1844, complaining of a tingling pain down the right arm to the hand, and of the right hip, down the back of the leg to the foot. This was followed, in six days, by a high state of fever and phlegmonous erysipelas of the right shoulder and arm. A large abscess formed in two days, and which was punctured about the middle of the arm, a large quantity of healthy and sanious pus escaping. A few days after the opening of the abscess, a red spot appeared over the head of the humerus, and which ulcerated in about a fortnight, and through the ulcerated opening, the head of the bone, deprived of its epiphysis, protruded to the extent of two inches, the other wound having healed in the interim. She soon afterwards entered St. Bartholomew's Hospital, where she remained fifteen weeks, at the end of which time nearly the whole length of the humerus was extracted, and the wound healed rapidly. After her return, there appeared to be ankylosis of the joint; and shortly afterwards she was thrown down, the new bone becoming bent at its upper third, in which state it still remains. At this time, the head and upper part of the thigh-bone were affected with periostitis, followed by the formation of several abscesses about the great trochanter, and the discharge, at intervals, of small pieces of bone. The disease of the thigh-bone continued for more than a year and a half, and the healing of the sinuses was immediately preceded by the coming away of a large portion of the head of the bone. The patient now enjoys good health, the right arm being shorter by two inches than the left; there is great mobility of the scapula, and when this is fixed, there is motion of the arm to the extent of 20°. The right leg is an inch and a half shorter than the left; and in consequence of a false joint between the femur and ileum, she possesses tolerably free movement.

Mr. Obre exhibited the

KIDNEYS OF AN INFANT PRESENTING CARCINOMATOUS DEGENERATION.

The subject of this case was the only child of young parents, born apparently healthy, and continued so until its seventh month, when scrotal hernia presented on the right side. The following month, a hard abdominal swelling, the size of an egg, was felt in the anterior part of the left lumbar region, which rapidly increased, in a few days attaining the size of a small melon. No definite opinion being given of its character, he was visited by Sir James Clarke, who also was unable to decide either on its structure, or from what organ it had its origin, all the functions and secretions being apparently undisturbed. The rapidity of its growth suggested malignant disease; but that was the only symptom which indicated such a result. A fulness was shortly observed in the right hypochondriac, caused by a similar tumour under the hepatic region. In the course of three or four months, the swellings had gradually increased until they attained a most enormous size, filling the abdomen, pressing back into the lumbar regions, and so distending the abdominal parietes, that they required the application of oil to promote their relaxation from the enormous pressure within; the tumours coalesced till they presented no definite boundaries; the distention was too great to prevent the child being placed in any position