the surface of the furniture, and the interior of cupboards, drawers, and closets, must be thoroughly cleansed and disinfected. If the walls of the room be covered with paper, this should be entirely removed and burnt; the ceiling whitewashed; and the floor scrubbed with soap and water, and then with carbolic acid. After this, the room should be left for a time unoccupied, with a fire in the grate, and the doors and windows open.

The preventive measures which I have mentioned are effectual in arresting the spread of scarlet fever amongst those who have space, money, intelligence, and the desire to save life. It is far more difficult to deal with the disease as it occurs in the overcrowded dwellings of the poor, where the healthy, the sick, and even the dead, are often found occupying the same apartments. The Association of Medical Officers of Health have recently published some useful suggestions relating to measures of public hygiene. They recommend that information by means of public handbills should be diffused through every family, as to the contagiousness of scarlet fever and the mode of preventing it. Every case of the fever should be reported to the officer of health, who would then give the needful information and assistance. Public day and Sunday schools in an infected district should be authoritatively closed. It should be a punishable offence to send a child to any school, public or private, from a house or family in which fever exists. Sufferers from scarlet fever should not be permitted to visit the out-patient rooms of hospitals or dispensaries. Sufficient hospital accommodation should be provided for the poor, with arrangements at each hospital for the disinfection of the person and clothing of the patient on his discharge. The medical officer of health should, when necessary, have the power of enforcing the removal of patients from overcrowded houses. An appropriate carriage should be provided in every district for the removal of the sick to the hospital. At present, public cabs are largely used for this purpose; and the Sanitary Act, as it relates to the use and disinfection of public carriages for the conveyance of persons with infectious diseases, is not enforced as it ought to be.

There should be in every district one or more mortuary houses for the reception of the dead; and removal thereto should, when necessary, be compulsory.

The sanitary authorities should provide such a staff of assistants and appliances as may be necessary to disinfect houses, clothing, bedding, etc. The twenty-third section of the Sanitary Act, empowering local authorities to provide means of disinfection, has been almost ignored in the metropolis, not even a "proper place" being provided where disinfection may be carried out. There should be arrangements by which articles of clothing, bedding, etc., destroyed by order of the medical officers of health, may be either replaced or paid for. During the disinfection of a house or apartment, or when the sick cannot be removed, it is necessary to remove the healthy. For this, there should be one or more houses of refuge provided, in which poor families may be temporarily lodged, and with means of disinfecting the persons and clothing of those removed. A house of refuge is at the present time utterly unknown in the sanitary arrangements of the metropolis.

It is well to bear in mind that, although the poor are the chief, they are by no means the only, sufferers from the defective sanitary arrangements to which I have referred. When scarlet fever prevails extensively amongst the working classes, there are many channels through which the subtle contagion may reach their employers. To mention only a few amongst numerous sources of infection, it is certain that the tailor, the dressmaker, the upholsterer, the baker, the shop-assistant, male or female, the laundress, and even the milkwoman, may be the unsuspected agents by which the morbid poison is conveyed to the very highest classes. It is manifest that all classes are equally interested in arresting the progress of this truly formidable disease.

BEQUESTS, ETC.—The East London Hospital for Children has become entitled to £2,000, subject to the life interest of a gentleman aged 60; and to £20,000 contingent upon the death of a child aged five, before attaining 21, under the will of John Saunders, Esq.—Miss Eleanor Atherton has bequeathed £1,000 to St. Mary's Hospital, Quay Street, Manchester; £1,000 to the Manchester Royal Infirmary and Dispensary; and £500 to each of the following, viz.:—the Eye Infirmary; the Asylum for Idiots, Earlswood; the Royal Hospital for Incurables, Putney; and the British Home for Incurables, Clapham Rise; in addition to several munificent bequests to other charitable and religious institutions.—The Salop Infirmary has received £300 under the will of Richard Hodges Gwyn, Esq.; and £200 under the will of Henry Bayley Clive, Esq.—The Bristol Royal Infirmary has received £300 under the will of W. H. Edwards, Esq.—Capt. W. B. Phillimore has made a sixth donation of £25 to the National Hospital for Consumption, Ventnor.

THE PATHOLOGY OF GENERAL PARESIS.*

By W. H. O. SANKEY, M.D., Sandywell Park, Cheltenham,
Lecturer on Psychological Medicine in University College, London.

FRENCH authors have for many years held that general paresis is a distinct morbid species. Some years ago, I examined this question from a symptomatological point of view; and at that period I was disposed to believe that the evidence was in the main favourable to their opinion. Subsequent experience and reading have confirmed my previous belief. I am now disposed to go still further, and to assert that, if we exclude certain cases usually found in our asylums of imperfect development, cases of climacteric decay, and cases of epileptic mania in which the mental symptoms are secondary, all the rest belong but to two species of disease—viz., Ordinary Insanity in its various stages, and General Paresis.

The diagnosis of one of these diseases thus affords, by a negative process, the diagnosis of the other. In other words, I believe that to ascertain that the symptoms of a case do not belong to one disease shows that they do belong to the other.

As my remarks must be necessarily brief, I will not here repeat the evidence from the symptoms for considering general paresis distinct in species from other forms of insanity; but I will state in few words my reasons for including all other cases of insanity under one species.

I hold that, for a disease to be considered a distinct morbid species, it should be shown to have a distinct origin, a distinct and peculiar course of progress and termination, with distinct anatomical characters; and until this can be proved, or even until a tolerable uniformity between a given set of cases can be shown, I do not think we should consider that we have a distinct disease. I do not know of any distinct characters in the so-called different kinds of insanity which satisfy these requirements. On the contrary, if we examine in any asylum a number of imbeciles giving no distinctive characteristic in their imbecility, we shall find among the cases some which were called formerly puerperal insanity, some homicidal insanity, some melancholia, suicidal mania, phthisical mania, hysterical mania, amomania, and so on. These cases at their outset have been probably attributed correctly to some peculiar cause; but the morbid process occasioned has run a given course, varying within certain limits only. They have terminated in a state of imbecility having a general resemblance, yet varying also possibly in some peculiarities.

My belief is, that the course of all these cases may be thus epitomised in general terms. With respect to the mental phenomena, the patients have first gone through a stage of depression of spirits; next, of morbid apprehension, alteration of the moral faculties, illusions going on to delusions, and disorder of intellect proper, imbecility, and dementia. With respect to the motor phenomena, they have shown either restlessness, agitation, and violence; or dulness, inaction, and stupor; but no form of paresis.

The above being the phenomena of insanity proper, by a process of exclusion, cases which have not gone through these stages should be cases of general paresis. There is, however, besides this negative mode of proceeding, in many cases, positive evidence, derivable from a totally different set of phenomena; and this long before any motor defect is present. These phenomena are such as great garrulity, wild and exuberant spirits, alteration of character, sexual impropriety, etc.; and more especially I would mention, in some cases certainly, an early exhibition of maniacal violence.

These two sets of phenomena must necessarily have each a different pathology and etiology. For brevity's sake, I will omit the steps by which I was led to my conclusions, but will state the solution at which I have arrived.

I believe that the difference in the phenomena is due to this. In ordinary insanity, the cerebrum is affected through its nutrition-processes—in other words, through the blood. In general paresis, the primary effect is produced *directly* on the nerve-tissue, by a mental shock or a severe physical shock, acting directly on the nervous centres.

The first symptoms of the one disease are connected, therefore, with the nutrition-processes; while the first symptoms of the other disease are connected with the nerve-functions.

In ordinary insanity we have, primarily, distinct evidence of disturbance of the digestive functions, such as loss of appetite, foul tongue, constipation, acidity, flatulence, præcordial pain, palpitation, etc.; and eventually diseases of the blood-making organs—diseases of the lungs, liver, kidneys, and heart—as shown on *post mortem* inspection. On the other hand, the early symptoms of general paresis are quite uncon-

* Read in the Psychological Section at the Annual Meeting of the British Medical Association in Newcastle-upon-Tyne, August 1870.

nected with the chylipoietic organs. Neither appetite, digestion, nor nutrition is disturbed; and dyspeptic symptoms are not present. After death, the blood-forming viscera are, as a rule, normal. The first symptoms, on the contrary, are a decided alteration of character of the individual; while in insanity proper the natural character is simply modified by depression of spirits.

Further, that the primary cause of general paresis is an effect produced on the nerve-tissues direct, is corroborated by what is observed with respect to the smaller arteries and capillaries of the brain in the two diseases. I have found, in the examination of the coats of the smaller arteries in ordinary insanity of long standing, a decided hypertrophy of their walls. In several cases, the walls of the artery were three or four times as wide as the calibre of the vessel. In general paresis, such amount of thickening does not exist; but a very different and curious condition occurs: the small arteries are curiously contorted and varicosed. Their walls are delicate and transparent, as in health; and the varicosity involves even the capillaries themselves.

The explanation of these different conditions I take to be the following; and it is to Dr. George Johnson's paper that I am indebted for my solution of this point. In ordinary insanity, in which the blood-making organs are the starting-point of the disease, the hypertrophy of the muscular walls of small arteries takes place from overwork. The blood being in a state not suited for the cerebral supply, the small arteries would be constantly excited to close upon their contents; and by this constant work, according to the usual laws, would become hypertrophied. On the other hand, in general paresis, the primary defect or lesion being in the nerve-centres, and every part of the nerve-system being involved, there is paralysis of the nervous plexus of the vessels themselves: they do not, therefore, resist the influx; are not, therefore, hypertrophied; but, on any extra action of the circulation, are thrown into a condition of varicosity.

There is, therefore, evidence of the paresis extending to every division of the nervous system—the cerebro-spinal and sympathetic; and that this is the case, is corroborated by the subsequent course of the disease. The ideational, the emotional, and the excitatory phenomena are become obtuse and dull; and death occurs usually through defect of nerve-action.

CLINICAL MEMORANDA.

JAUNDICE AFTER ANXIETY: ADMINISTRATION OF BROMIDE OF POTASSIUM: QUICK RECOVERY.*

IN October 1868, I attended a married lady aged 30, for jaundice following mental and physical fatigue. The ordinary remedies were used. The nitromuriatic acid was of the most service; but the discoloration persisted for some weeks. Six months after this, she had several visitors staying in the house, and, having little inclination for society, was somewhat disturbed by attending to them, and by the addition to the ordinary cares of her household. In the midst of this anxiety, one of her children, subject to asthma, had a severe attack one evening, and was in considerable distress all night. Next morning, at five o'clock, I found her sitting up in bed, rocking to and fro, and complaining of acute pain in the hepatic and gastric regions. Pulse 72; temperature 98.4 deg. She showed slight but unmistakable symptoms of hysteria—quivering eyelids, etc. Ten grains of the bromide of potassium were given, therefore, every four hours. The first dose cured her of all pain at once. On the following day, however, I found her completely jaundiced, and the urine of a dark brandy colour. The bromide was continued, but less frequently; and an aperient pill (podophyllin with colocynth and henbane) was given. On the next day, the jaundice was less intense; and three grains of the bromide with infusion of calumba were given three times daily. Two days afterwards, the yellowness had entirely gone, and the urine was of a natural colour.

I do not pretend that the aperient pill had nothing to do with this rapid recovery; but, on the other hand, we know how little purgatives often avail in such cases. Neither do I think they would have availed anything in this case, had not that condition of the nerve-centres upon which (no matter *how*) the jaundice ultimately depended been first, as it were, neutralised by the bromide. Nevertheless, I should have laid little stress on a single case, but that Mr. Jessop of Leeds, to whom I am indebted for the suggestion of this plan of treating nervous jaundice, tells me that he has several times used the bromide with equal success.

T. CHURTON, M.R.C.S., Erith.

* Read at a meeting of the West Kent District of the South Eastern Branch, at Rochester, September 1870.

NOTES ON THE EPIDEMIC OF RELAPSING FEVER IN LIVERPOOL.

By ROBERT GEE, M.D., M.R.C.P.,
Physician to the Liverpool Fever Hospital, etc.

V.

DURING the month of October the epidemic steadily increased up to the 20th, when it reached its maximum, there being on that day 1419 cases in the various hospitals. Since that date there has been a slight decrease, due rather to the large number of discharges than to a marked diminution in the number of admissions. The following report of the month renders this apparent:—

	Admitted.	Discharged.	Died.	Remaining.
Week ending Oct. 1 ...	326	237	14	1191
" " 8 ...	369	307	18	1235
" " 15 ...	433	320	9	1339
" " 22 ...	405	354	22	1368
" " 29 ...	289	250	18	1389
" Nov. 5 ...	388	411	27	1339
Total.....	2210	1879	108	

Two additional wooden hospitals or sheds were erected in the course of the month, so that provision is now made for 1500 cases.

Scarlatina has been rife in some districts of the town for some time, and during the month an unusual number of cases were sent to the Workhouse Hospital. This was embarrassing, as the wards for infectious cases were already occupied. Temporary arrangements were made for their reception, and the select vestry secured, without delay, a large house in the suburbs, to which all have been transferred. It now contains fourteen cases of scarlatina and one of variola. The establishment is placed under the medical charge of Dr. de Zouche.

It will be well to enumerate some of the difficulties with which we had to contend during the epidemic. Its spread was so rapid, and its range in the lower parts of the town so extensive, that great energy and labour were called forth to meet the requirements of the case.

The first difficulty was that of providing sufficient hospital accommodation of a suitable character. How this was surmounted has been already stated in previous notes, which renders it unnecessary to refer to it again.

Another difficulty was that of securing a sufficiently large and efficient staff of nurses and under nurses. It was impossible to obtain *trained* nurses, and we were under the necessity of selecting the best, to all appearance, from the sparse numbers who offered their services for this hazardous temporary work. They were of the classes of respectable servants or widows of good reputation. Some of them proved valuable helps, while others had soon to be dismissed as useless. All were placed under the supervision of the old staff, who proved themselves equal to the arduous duties they were called upon to fulfil. The large tribe of under nurses were selected from the class of healthy paupers in the workhouse. Unhappily (or happily) they could not be obtained in sufficient number, as there was a scarcity of able-bodied women in the establishment. To make up the deficiency a supplemental staff was formed of the convalescent cases, who were urged to render such assistance as lay in their power, and as their strength would permit. Considerable pressure was required in the first instance to induce them to give the slightest assistance. Firmness and persuasion, however, prevailed, and eventually they gave very material help.

The securing of what was deemed a sufficient staff of nurses did not terminate our anxieties with regard to the nursing department. Far from it, we had to deplore, from day to day, the fact that, after a few days' employment in the wards, the nurses themselves succumbed to the disease, thus not only diminishing our forces when most urgently needed, but demanding extra assistance from a reduced staff. Those anxieties moderated in the course of time, for all recovered, and are now seasoned and qualified for the duties which they have to perform.

Another difficulty was the registration, disinfection, and washing of the heterogeneous mass of filthy clothing in which the patients were admitted. Each article had to be disinfected and washed, and thus delivered to the patients on receiving their discharge. This department of our service occasioned no small amount of solicitude—some bundles went astray, and others were destroyed as unfit for use; and many patients were, in consequence, detained in hospital longer than they otherwise would have been. But when the large number of daily admissions (60 to 100), the condition of the clothing itself, the purifying process it had to undergo, and the novitiates of the staff, are considered, the irregularities