

staff; and as we had not the opportunity of seeing the medical officer, we have been at the pains to ascertain from him the exact status of those who are employed in this infirmary as nurses. Under these circumstances the services of the inmates must still be retained in the nursing of the patients; but as we did not see the "nurses" we were not able to ascertain to what extent they made use of the inmates in nursing the sick.

DEFECTS IN THE INFIRMARY BUILDINGS.

We were surprised to note so many defects in a building of a comparatively recent date. First, there is the want of bathrooms above spoken of. It is difficult to understand that any institution intended for the reception of any number of sick people should not include one or more bathrooms. The water-closets are not on a level with the wards but are on a lower landing, obliging the aged and weakly to go up and down stairs, or adding to the work of the nurses by giving them additional steps. The wards themselves admit of no classification except that of infirm or sick. Then the labour ward is only a piece taken off the main ward, and, in the event of any epidemic, isolation would be almost impossible; it is also too small for its work. No separate wards for children is a mistake, especially in this house, where there seemed to be a large number of children, and where the management of the children's department in other particulars appeared to be enlightened and liberal. We saw no slop sinks, or, indeed, any place for the emptying of vessels other than the closets. Hot and cold water is laid on outside the wards.

GENERAL ARRANGEMENTS.

The infirmary buildings look on to a garden, in which the master informed us the patients are permitted to sit when the weather is suitable. There are also airing courts for the male and female patients. The receiving wards are near the gate, and the master can admit any patient to the infirmary from these wards if in his opinion necessary, reporting the same to the medical officer. The infirmary is in telephonic communication with the master's quarters; the medical officer lives at some little distance from the workhouse; one of the nurses is the midwife.

DIETS.

The dinner, which was being served at the time of our visit, was meat and potatoes for those able to eat it, and broth for the more sickly. The matron informed us that the medical officer ordered such extras as he judged necessary, such as milk, beef-tea, and puddings, and that food was given to the patients at night. The meat was boiled neck of mutton, or some other form of boiled mutton.

RECOMMENDATIONS.

We advise that a new infirmary be built with all necessary appliances for the nursing of the sick, bathrooms, slop sinks, closets of easy access for the sick and helpless, separate wards for the children and for the offensive cases, and a proper lying-in ward. The nurses' quarters under the same roof. That the infirmary and the isolation hospital be made into a separate department under the head nurse. That the existing infirmary be utilised for the imbeciles, idiots, and "fit" cases, the same to be in the charge of a responsible attendant. When the infirmary has been remodelled, we suggest as the top stone that a complete staff of trained nurses be placed in charge, the entire sick department be taken from under the control of the workhouse officials.

PATIENTS FOR THE PASTEUR INSTITUTE.—Eight persons have been bitten recently in Glasgow by a dog which subsequently died of unmistakable rabies, as verified by Professor McCall, who kept the animal under observation until its death. By direction of the Health Committee, the persons bitten, who were all males, left Glasgow on Christmas Day under the care of Dr. Chalmers for the Pasteur Institute in Paris. The local authority have issued a muzzling order.—Four persons bitten in Lancaster by a dog found to be rabid after veterinary examination also went last week to the Pasteur Institute for treatment.

OBSERVATIONS ON MALARIAL PARASITES IN AMERICA.

We have received from Dr. William Osler, Professor of Medicine in Johns Hopkins University, Baltimore, a communication containing the conclusions of a report on parasites found in the malarial fevers observed in and about Baltimore. The report will appear in an early number of the *Reports of the Johns Hopkins Hospital*.

The following are the general conclusions on parasites observed in types of malarial fevers drawn up by his two senior assistants, Dr. Thayer and Dr. Hewetson. The observations extend now to more than 600 cases, in all of which the blood has been carefully studied. The full details will appear in a fasciculus of the reports of the Johns Hopkins Hospital, which will shortly be issued.

GENERAL CONCLUSIONS.

Malarial fever is rare in Baltimore during the winter months but becomes more frequent as the season advances, reaching a maximum in the month of September, the majority of all the cases occurring in August, September, and October. Any differences between the susceptibility of individuals of different ages and of the two sexes depend apparently only upon the varying chances of exposure to infection. The relative susceptibility of the negroes is by nearly two-thirds less than that of the white population. We have distinguished three varieties of the malarial parasite (1) the tertian parasite; (2) the quartan parasite; (3) the æstivo-autumnal parasite.

1. The tertian parasite requires about forty-eight hours to accomplish its complete development, and is associated with relatively regular tertian paroxysms, lasting on an average between ten and twelve hours, associated almost always with the three classical stages—chill, fever, and sweating. Infection with two groups of tertian organisms frequently gives rise to quotidian paroxysms; infection by multiple groups of organisms rarely gives rise to more irregular subcontinuous fevers.

2. The quartan parasite is an organism requiring about seventy-two hours for its complete development. It is rare in this climate, and is associated with a fever showing regular quartan paroxysms similar in nature to those associated with the tertian organism. Infection by two groups of the parasite causes a double quartan fever (paroxysms on two days, intermission on the third). Infection with three groups of the parasite is associated with daily paroxysms.

3. The æstivo-autumnal parasite passes through a cycle of development, the exact length of which has not yet been determined. It probably varies greatly from twenty-four hours or under to forty-eight hours or more. But few stages of development of the parasite are found ordinarily in the peripheral circulation, the main seat of infection being apparently in the spleen, bone marrow, and other internal organs. Infection with this organism is associated with fevers varying greatly in nature. There may be a quotidian or tertian intermittent fever, or more commonly a more or less continuous fever with irregular remissions. The individual paroxysms last on an average about twenty hours. The irregularities in temperature depend probably mainly upon variations in the length of the cycle of development of the parasite, or upon infection with multiple groups of organism.

We have not been able to separate two distinct varieties of the parasite, though we feel that much more study is needed upon the subject.

The cases of malaria in the spring and early summer are of the milder and more regularly intermittent varieties (tertian and quartan fever), the severe æstivo-autumnal infections beginning to appear only in the later summer, and reaching their maximum in September.

The coloured race, while showing a relative insusceptibility to malarial infection, are equally susceptible to the various forms. The infections which recur are, however, more apt to take a simpler, milder course, the single tertian cases, for instance, outnumbering the cases of double tertian fever.

A majority of all the cases of malarial infection in this climate depend upon the tertian parasite; these tertian in

fections form the vast majority of all the cases in the first half year, and occur throughout the malarial season. The majority of infections during the height of the malarial season depend, however, upon the æstivo-autumnal parasite.

The earliest cases of tertian infection are more commonly single in nature, while as the season advances double tertian infections become more common.

Nothing in our experience has led us to believe that these varieties of the parasite are interchangeable. They are, we believe, distinct varieties, though closely allied to one another biologically. Combined infections with parasites of different varieties may occur, but they are rare, forming less than 2 per cent. of all the cases which we have observed.

The crescentic bodies associated with the æstivo-autumnal parasite develop from the small hyaline forms. We have seen nothing to support the view of Mannaberg that they are the result of conjugation. We have never seen sporulating forms which we believe to be developed from crescents. We are not inclined as yet to accept the view that these are degenerate forms, though we do not feel that their true nature is as yet determined. The nature of the flagellate bodies which are seen to develop in all types of malarial fever from the full grown organism is not yet determined.

The specific action of quinine upon these three varieties of the parasite is undoubted. It exerts its influence most strongly when the parasite is undergoing the process of segmentation, before the entrance of the fresh segments into new red corpuscles. It is best administered, then, just before the beginning of a paroxysm if we wish to obtain the most effect with a single dose. The action is much more rapid and certain with the tertian and quartan parasites than in the æstivo-autumnal infections.

THE PHYSICAL SIGNS OF VIRGINITY.

The doctrine has come down to us from venerable antiquity that the hymen is the sign of virginity; its laceration the proof of defloration; its presence or absence the test of the virtue of an unmarried woman. In the ancient words of the Hebrew Scriptures: "And the damsel's father shall say unto the elders, I gave my daughter unto this man to wife, and he hateth her; and, lo, he hath given occasions of speech against her, saying, I found not thy daughter a maid; and yet these are the tokens of my daughter's virginity; and they shall spread the cloth before the elders of the city."¹

Now, it is undoubtedly true that in most women there is a hymen; that in the first complete intercourse the hymen is usually torn; that in most women accustomed to sexual intercourse it can easily be seen that the hymen has been torn. But do these statements apply to all women?

In the first place, the toughness of the hymen and the size of its orifice vary very much in different women. In some the orifice is so large and the hymen so distensible that intercourse can be completed without laceration; in other women, partly because the hymen is tough, partly also from some defect on the opposite side, it happens that after months or years of married life the hymen is not torn, but simply pressed backwards, so that it comes to be funnel-shaped, with its apex inward, and the fossa navicularis becomes lengthened; this may happen without suspicion on either side that intercourse has not been complete. On the other hand, the absence of the hymen or the large size of its orifice does not prove unchastity. Further, scarcely a volume of the yearly indices to medical literature which are published can be referred to without finding a case or cases in which delivery of a child was obstructed by what is often incorrectly described as "imperforate" hymen. The presence of a hymen showing no sign of laceration therefore neither proves chastity nor negatives the possibility of pregnancy.

When we are asked what are the evidences of virginity, the question arises, what is meant by a "virgin?" When a prisoner is accused of rape, which is defined as "the carnal knowledge of a woman against her will," it is necessary, in order that the prisoner may be convicted of this crime, that it should be proved that penetration was effected. But for this purpose mere vulvar penetration is sufficient, and the

¹ Deuteronomy, xxii, 16, 17.

fact of a persisting hymen would not necessarily be accepted as an answer to the charge. Now if a virgin, in a legal sense, was one who had never had complete sexual intercourse, it would sometimes be possible, from physical examination, to assert virginity. If the hymen is in its natural position, not displaced backwards, and its orifice is small, showing no trace of having been torn, it is possible to say that complete sexual intercourse has never taken place. But the proportion of virgins is small in whom the hymen is so well formed, and its orifice so small as to warrant a dogmatic statement on this point.

But is this the legal meaning of the term "virgin"? According to the dictionary, a "virgin" is "a woman who has had no carnal knowledge of man." The meaning is often made more definite by the use of the words *virgo intacta*, untouched virgin. It is quite possible for a woman to have been guilty of sexual immorality, to have acquired venereal disease in the usual way, and to have become pregnant, without sexual intercourse having been complete, and without the virginal condition of the hymen having been destroyed. There is, then, no one physical sign from which a medical man can assert of any woman that she is *virgo intacta*, an untouched virgin.

Bearing these facts in mind, it clearly is of the greatest importance that medical witnesses should exercise much caution in giving evidence in cases where the chastity of a woman is called in doubt. The presence or absence of a hymen is a mere matter of fact, but whether the law cares to admit it or not, juries certainly accept the evidence of experts as expressing not only a fact but an opinion upon it. Although, then, it remains true that in a small number, comparatively a very small number of cases, the signs of virginity may persist after carnal intercourse, and although it may be impossible by any one sign or fixed criterion to say that a woman is a *virgo intacta*, still it is often possible for a medical man, taking all the circumstances into consideration, to form an opinion which may be very useful to a jury in arriving at a verdict upon a case. It is not merely a question of a hymen, but of its completeness, its position, its thinness, and its apparent lacerability under the asserted conditions, and also it is to some extent a question of these conditions. A persistence of hymen which would be no disproof of rape by an old or feeble man, might, in the mature judgment of an experienced surgeon, be quite incompatible with sexual intercourse with consent. It would, however, be far better were medical witnesses to be appointed either by the judge or by consent of both parties, so as to do away with even the appearance of conflict between them. This, however, we fear is at present but a counsel of perfection.

NOTES ON HEALTH RESORTS.

XVIII.—THE SAN TELMO SALINE SPRING AT PUERTO OROTAVA, TENERIFFE.

By GEORGE V. PEREZ, M.B.Lond.

DURING the few months that have elapsed since a patient afflicted with chronic eczema of the fingers accidentally found out the medicinal power of this spring, numbers of inhabitants have flocked to try them for all kinds of complaints, mostly without medical advice.

The water appears to be of signal benefit in various skin diseases, eczema and psoriasis chiefly. I have known an inveterate case of psoriasis of many years' standing to be markedly influenced by only one week's treatment. The patient took the waters freely—3 pints and more daily.

A few lepers still in an early stage have certainly been much improved, whilst, on the other hand, two or three in an advanced condition have done badly, from the occurrence of diarrhoea. The same mishap has attended its administration in cases of febrile phthisis. Dyspeptics have been relieved in almost all cases. Patients suffering from chronic rheumatism have derived much benefit; it has also been taken successfully in cases of chronic ulcers, scrofula, and glandular enlargements.

Whilst relieving patients with vesical catarrh, I have known it bring on cystitis in at least three instances in otherwise healthy persons; one of these drank eight glasses in one