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

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

¹ Deuteronomy, xxii, 16, 17.

day, and was seized during the following night with violent bladder symptoms.

Copy of Analysis of the San Telmo Spring, Puerto, Orotava, Teneriffe, made by Professor Attfeld on October 15th, 1894.

Dissolved Solids.	Grains per Gallon.
Chloride of potassium	20.020
Chloride of sodium	269.870
Nitrate of sodium	0.899
Chloride of magnesium	26.758
Sulphate of magnesium	33.041
Chloride of calcium	4.906
Carbonate of calcium	7.200
Oxide of iron (alumina, traces) ...	0.140
Silica	1.694
Total dissolved solids	387.428

The water is remarkably free from organic (animal or vegetable) matter, only 0.04 of free ammonia per 1,000,000 and 0.02 of albuminoid ammonia per 1,000,000 being yielded; in fact, there is practically no organic matter present.

The water contains no special gases beyond the usual minute amounts of the three gases of the atmosphere (nitrogen, oxygen, carbonic acid) present in all ordinary water.

This chemical analysis clearly shows that the water belongs to the class of "strongly saline, mildly laxative" mineral waters.

(Signed) JOHN ATTFIELD.

Generally speaking, I should say that this new spring has the same applications as Kissingen, Homburg, Kreuznach, Ischl, and other saline springs, having the advantage over them that, whilst few, if any, go to Germany in winter to take these waters, here, thanks to the wonderful uniformity and mildness of the climate, they could be administered in winter with equal advantage. It can be confidently predicted that for the uric acid diathesis—for gout and rheumatic gout—this spring, so happily situated, will be a great boon.

THE FLORENCE FACULTY OF MEDICINE.

By STUART TIDEY, M.D.LOND., M.R.C.P.LOND.

THE DEPARTMENT OF PHYSIOLOGY.

IN England we look to the individual to initiate and elaborate, in Germany the individual is but an accident in an elaborate State organisation, in Italy we find a happy engrafting of modern State organisation on to the hereditary stock of individualism.

Professor Fano, of Genoa, who last year succeeded Professor Luciani, now in Rome, in the Chair of Physiology in Florence, is just completing the reorganisation of the department. There are now twelve or fourteen laboratories, each for a special kind of work. A dynamo, driven by a gas engine, provides light and motive power throughout the building through the medium of twenty-four accumulators. Electricity is used *inter alia* for driving a centrifugal machine, which makes 3,500 revolutions a minute. A series of about twenty small dwellings for animals opens into the garden, and looks very clean. In the garden are birds, tortoises, and a fishpond. Among the rooms are Professor Fano's bureau and private laboratory, the assistant's laboratory, a dark room for optics and photography, and a theatre, to contain about eighty students, with the motto "Provate e Riprovate." There is a room for physical experiments, an operating room, and a special room for the estimation of gases fitted with Pffüger's gas pump and Pettenkofer and Voit's apparatus for estimating the gases of respiration. A few senior students have the privilege of working in the laboratory.

Professor Fano remarked that the finest laboratories with which he was acquainted were Professor Michael Foster's at Cambridge. There is nothing in London to compare with the physiological laboratories of poverty-stricken Florence.

THE DEPARTMENT OF GYNÆCOLOGY.

This forms part of the maternity hospital, and is affiliated to the medical school of Santa Maria Nuova. The theatre is lined with glazed tiles, and admits of thorough cleansing with a hose. The instrument cupboards and tables are of glass, and the receptacles of glazed earthenware. The operating table is of metal. Towels and sponges are boiled, and the dressings are in the tin cases in which they have been baked. Chemical cleanliness replaces antiseptics. Chloroform is the anæsthetic used; it is administered on an ordinary muzzle, and death under chloroform is of the rarest occurrence. Dr. Hirsch, the resident assistant, is of opinion that

safety depends on the method of administration, but that racial idiosyncrasy may render the Italian less susceptible to its toxic action than is the Anglo-Saxon. I was struck with the absence of dread on the part of patients awaiting operation. Their manner expressed confidence in the operation as a means of relief, a mental attitude which doubtless contributes to the weal of the patient.

Trendelenburg's position is adopted for laparotomies, and doubtless affords the best view of the pelvic organs. The latter tend to approach the abdominal incision, while the intestines keep out of the way, and light from a side window strikes direct into the pelvic cavity. I saw the following operations performed by Professor Pestalozza with the patient in this position: For removal of diseased ovary and dilated Fallopian tube; for adherent retroflexion of uterus with severe symptoms of pain and hæmorrhage; for pyosalpinx, a severe case with matting of peritoneum and dense adhesions of tube and ovary to intestines, omentum, etc. The median incision is free, extending from near the umbilicus to the pubes. A strong ligature is passed through the entire thickness of the abdominal wall on either side, for the purpose of holding open the wound; a third is passed at the lower extremity of the wound to prevent the peeling off of the parietal peritoneum. A portion of the pedicle of the appendages is included in a ligature, and tied; the corresponding portion of the pedicle is then divided; a second portion is then ligatured and divided, and so on till the entire pedicle is divided. This method is also adopted for the division of adhesions, or removal of thickened peritoneum. After removal of diseased organs the opposite side is examined, and finally the cavity is dried with medicated gauze. If pus escape a square piece of gauze is thrust into the most dependent part of the peritoneal cavity, so as to form a pouch, and this is filled with strips of gauze. The upper and lower extremities of the wound are sutured, and the dressing protrudes somewhat below the middle of the incision. On the fourth day the dressing is replaced by a drainage tube. I saw two such cases on the eighth day; both were healing well. The tubes are frequently removed on the tenth day. In simple cases the abdominal wound is closed by a single row of sutures. Some of the old cases I saw showed perfect cicatrisation. Cases of laparotomy for removal of appendages, for division of adhesions, and for small tumours frequently leave the hospital on the tenth day.

THE MOCKLER COLLECTION OF JENNER RELICS.—The collection of relics relating to Edward Jenner, which was exhibited by Mr. Mockler at the Bristol Exhibition and, in the early part of last year, at the First Avenue Hotel, was put up to auction on December 21st, 1894, by Messrs. Puttick and Simpson. There was a poor attendance of purchasers, and very few lots changed hands, the bidding being in most cases below the owner's reserve. The portraits were brought in at prices ranging from one to four guineas; nearly all the original drawings by Stephen Jenner were disposed of for very small sums. The miniatures did not change hands; the one of Edward Jenner being bought in at £4; the drawings of the vaccine pustule were likewise bought in for £3 5s. A few of the "objects of interest" changed hands; the silver porringer was bought in at £27, and the gold mourning ring with inscription, worn by Jenner in memory of his wife, for £5. The diplomas and certificates did not change hands, nor did the collection of books and pamphlets; the latter were bought in at £11. A few of the autograph letters were sold at prices ranging from 10s. to 25s., but the majority were not disposed of. The minute books of the Jennerian Society were bought in for £6 10s., and the MS. of the "Inquiry" for £8 10s.

SMALL-POX IN EDINBURGH.—Fifteen fresh cases were reported last week as against 10 in the previous week, with 1 death as against 4 of the former week. One case at least has been reported from Jedburgh. Leith seems particularly free from this, or indeed any other, infectious disease.

THE Sultan has conferred the grade of Grand Officer of the Medjidie on M. Monod, Director of the Assistance Publique; Professor Grancher: Dr. Roux, of the Pasteur Institute; and M. Pozzi, the well-known gynæcologist; and that of Commander on Dr. Martin.