last part of the course, too, when diseases of the blood are being considered in the laboratory, the lectures run parallel to the laboratory work. They are in part explanatory of the laboratory work to come, and in part are devoted to criticisms of the work of the week just finished. Diseases of the blood are considered as a whole, not merely in their laboratory aspects. The lecture room is inferior to the clinic for the purpose of bringing before the student clinical pictures of disease types, and is even more inferior to the laboratory for teaching hematological findings, but it will always be the most practicable place to discuss theoretical considerations, such as the metabolism of iron, the "leukemia question," pathogenesis and historical and literary matters. Here, too, it is helpful to use freely the lantern and apparatus for opaque projection.

Textbooks are of little importance in this subject. We encourage our students to use the literature and place standard works at their disposal, but no systematic reading is required.

Marks and examinations are a necessary evil, but they are none the less so if they are improperly managed. In grading the students at Tufts we take into consideration the daily work in the laboratory (40%), a practical examination (20%) and a written examination (40%). In the practical examination the students are asked to perform one of the common hematological procedures, such as counting the white corpuscles, and to report on a specimen smear or identify a series of normal and abnormal blood cells placed under microscopes and indicated by pointers. This examination is conducted in sections. In marking the students on their daily work in the laboratory, we consider not merely the accuracy of the work, but also the care of the apparatus. The *vis a fronte* of ambition is often insufficient to make a student wipe his lenses or dry his pipette without the *vis a tergo* of a possible "docked" mark. A possible betterment of his mark, too, will often stimulate a student to do extra work outside the classroom.

The relations between a laboratory course in hematology and the general clinical courses in medicine ought to be very close indeed. The technique of counting, staining and the examination of smears is best taught in the laboratory under the guidance of one head, but many teachers in clinical lectures or in small sections at hospital or dispensary must share in the demonstration of cases. Students working in small sections, or acting as assistants in clinics, or preparing cases for conferences or reports, or doing research work, should receive from the instructor in hematology every possible assistance by the loan of apparatus and otherwise in studying blood conditions in actual cases of disease. In short, everything possible should be done to encourage the student to use his technical knowledge, lest, as so often happens, he relegate it to the limbo of the forgotten.

In arranging instruction in hematology, it must always be borne in mind that the subject is a practical one. A study of the catalogues of a number of medical schools will lead one to

suppose that laboratory instruction in this branch is quite frequently given only in connection with laboratory departments like pathology or chemistry. In some schools it forms part of special departments of clinical microscopy or clinical pathology. It seems far better that the subject should be taught as a clinical one by the department of clinical medicine. If the student is not taught to make blood examinations by those he looks up to as his teachers in practical matters, he will never use his laboratory technique in his own practice. This is a matter of the greatest importance. If the student could see in the hospital clinic every case whose blood he examines in the laboratory it would be greatly to his advantage. For obvious reasons this is impossible. Still at Tufts we try to bring it about as often as we can. Cases of hematological interest are demonstrated in the hospital amphitheater by the instructor in hematology. Enough smears are made from each case so that each student may have one for study in the laboratory. A few are permitted to do the counts and hemoglobin. Pure "paper cases," whose blood alone is seen, possess no such interest as these. When, as occasionally happens, such a case comes to autopsy and the organs can be demonstrated, we feel that we have made a long step towards establishing in the student's mind the close relationship that should exist between laboratory and clinic.

PRURITUS ANI: ITS ETIOLOGY AND TREATMENT.

BY T. CHITTENDON HILL, M.D., BOSTON,
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THE writings and teachings of some of our most eminent authorities on the subjects of dermatology and proctology enshroud the condition known as pruritus ani with a good deal of mystery. "At a recent meeting of the British Medical Association at Oxford, an interesting discussion took place, in the Section on Dermatology, on the causation and treatment of pruritus ani; any one reading that debate cannot fail to be struck with the enormous number of distinct diseased conditions to which this annoying symptom was attributed by the various speakers, and large as the number of supposed causes assigned were, the various plans of treatment advocated were still greater. All the resources, not only of the Pharmacopeia but of the extra Pharmacopeia being in turn favored."¹

Hence we find among the profession conflicting views in regard to the nature of the disease and a wide diversity of opinion as regards the best methods of treatment.

Some maintain that the itching is due to such gross lesions as internal hemorrhoids, anal fissures, fistulæ, prolapsus recti, etc., and are greatly surprised that operative treatment has not resulted in a cure. When these conditions are not found the patient is considered neurotic

¹ Ball: Brit. Med. J., 1905, i, 113.

and but scant sympathy is wasted on the unfortunate individual.

Others are in the habit of attributing the cause to some constitutional disease, as diabetes, rheumatism, gout, tuberculosis, or syphilis, and their treatment is principally constitutional and dietetic. However, neither of these views seems reasonable to the writer and practical experience in the treatment of this annoying affection has proved the cause, in the vast majority of cases, to be far different.

In this consideration it is proposed to discuss only the more chronic and aggravated forms of pruritus ani, such as are commonly associated with characteristic changes in the peri-anal skin. Slight transitory itching is not to be included.

Symptoms. — The picture of a typical pruritus case, with which nearly every practitioner is familiar, is much as follows: The patient, generally a man of otherwise robust health, tells you he is a martyr to an itching so intense that pain in comparison would afford him much relief. In fact his greatest aim in life is to find a panacea for this affliction which is rendering life almost intolerable. He has dictated himself in every possible manner, he has used all kinds of local applications, he has taken internal remedies of every description, he may even have been operated upon, and has gone in vain from one physician to another seeking a cure.

He feels that in certain instances his medical attendant has made light of his ailment, in others they did not understand his case, and that he is getting worse instead of better. Now can we offer any hope of permanent cure to these patients? I believe that in nearly every instance we can and that it is frequently the most inveterate cases that yield most readily to treatment.

Pruritus ani should be regarded as a symptom caused by an unnatural moisture or discharge which is produced by either lesions about the anus, or by congestion or some pathologic condition in the rectum or sigmoid. This constant discharge, even though slight and scarcely discernible, eventually brings about pathognomonic changes in the structure of the epidermis in this region.

It is of a mildly inflammatory nature and is in reality a dermatitis which passes into the chronic form when the skin loses its natural color and presents a sodden, blanched appearance.

Treatment. — The most important thing is to find out and eliminate the exciting cause. Next in importance, or rather equally important, is that appropriate treatment be instituted which will tend to restore the skin of this region to its normal state. At this juncture it might be advisable to state that only those who are willing to observe details should undertake the care of these patients. Very little can be left to the patient even after the cause has been removed.

The exciting causes and their treatment will be considered in the order of their frequency as follows :

(1) Ulcerations or abrasions of the anal canal.

This lesion is very constant and should always be sought for. Mr. F. C. Wallis,² of London, first called attention to the frequency with which it occurred in pruritus. He maintains that 90% of all cases may be attributed to this cause.

His method of treatment, briefly described, is as follows: The ulcer is cocoanized by the injection of a few drops of the solution immediately beneath it. This elevates the lesion so that it can the more readily be cauterized with the galvanic cautery knife. After this it is smeared with vaseline and an opium suppository inserted in the rectum. In very bad cases when there is considerable ulceration, Mr. Wallis is in the habit of using a general anesthetic in order that the sphincters may be stretched and the actual cautery used.

Three years ago I had an opportunity of seeing Mr. Wallis treat a large number of cases* by this method, and was greatly surprised that the cure of such a small lesion as was sometimes discovered would so quickly relieve the patient of the intense itching. Since then in my own practice I have often demonstrated the fact that the whole cause of the pruritus may be attributed to a very small ulcer or abrasion of the mucous membrane of the anal canal.

(2) Catarrhal diseases. The rectum in such instances is never entirely free from feces, a condition which is productive of chronic forms of proctitis, sigmoiditis, superficial ulcerations, etc. The passage of flatus at such times allows a small quantity of mucus to escape, thus irritating and rendering moist the anal region.

These patients are best treated by securing soft evacuations of the bowels at least once in every twenty-four hours, by means of a suitable aperient taken at bed-time. After the bowels have moved in the morning they should be washed out with a half pint of a 4% boric acid solution. Furthermore it will be found beneficial to make stimulating applications of silver nitrate or balsam of Peru to any abrasions or ulcerations which may remain. This is best effected with the protoscope, with the patient in the knee chest position.

(3) External hemorrhoids are more frequently the cause of pruritus than internal ones. These ragged tags of redundant skin render it almost impossible for the patient to properly cleanse the anal region after defecation. This persistent fecal soiling sooner or later produces a dermatitis in persons predisposed to its occurrence. This variety of hemorrhoid may be easily removed after injecting with a $\frac{1}{4}$ of 1% solution of eucaine. The wound may be allowed to heal by granulation, yet if the base of the hemorrhoid was broad it is better to close it with catgut sutures. When the folds are numerous only two or three should be removed at one time, lest anal contraction take place.

(4) Situated from 3 to 9 mm. above Hilton's white line are several small pockets, the functions of which are still under discussion, yet it is

² Wallis: Brit. Med. J., 1905, i, 1029.

* These patients were treated at St. Mark's Hospital for Diseases of the Rectum, London.

generally conceded that they have something to do either with the storing or secreting of rectal mucus.

These little pockets will admit a probe, which has been bent upon itself, from $\frac{1}{4}$ to $\frac{1}{2}$ an inch, and by means of the anoscope³ which I have devised they may be readily seen and explored. The thought had frequently occurred to the writer that these little crypts when inflamed or infected might not functionate properly. This being the case they produce an over-abundance of rectal mucus which would escape at the anal orifice.

Thus they would account for the moisture present whichever theory we may hold as to their normal physiological function. For instance, if we believe them to be reservoirs then when diseased they may fail to take up the normal rectal mucus, while on the other hand, if we consider that their function is productive, if diseased they would produce an excess of mucus (blenorragia).

However it may be I have, in a few instances in which there was no other ascertainable cause for the pruritus, succeeded in curing my patient by swabbing out these little pockets with stimulating lotions of 5% silver nitrate, or balsam of Peru, 5%.

Growing from the margins or surfaces of these valves one frequently finds little white projections or teats which can be made out by the exploring finger. Stroud⁴ explains their presence here as "accessory sense organs of a higher degree of development than the major part of the pecten, and not pathological outgrowths." Whatever their nature may be it is certain that when hypertrophied they are prolific of many distressing sensations about the anus.

Among them may be mentioned, uneasiness in the rectum, such as a "creeping," "crawling" sensation, and a feeling of incomplete relief after defecation. Quite frequently pruritus is the most prominent symptom.

The treatment of these cases is very satisfactory. It consists in snipping the growths off with a pair of nasal scissors as they protrude through the window of the anoscope.³ It is best to apply a strong solution of cocain before removing them.

(5) Small polyps of the anal canal, protruding internal piles, prolapse of the rectum and anal fissures, as well as other conditions, do doubtless occasionally cause itching about the anus, but very seldom in the writer's experience are they the cause of an old chronic or inveterate pruritus ani.

When encountered, however, associated with pruritus, they should be dealt with according to their special surgical indications.

Now, notwithstanding the fact that the exciting cause has been discovered and eliminated, it is necessary to direct appropriate treatment to the unnatural skin before much amelioration of the itching can be expected. It seems probable that

it is the product of a chronic inflammation of the skin, with more or less thickening and infiltration, which in some way throws out of gear the "simple nerve endings which exist so abundantly in the epidermis." It is this departure from the normal which produces the sensation of itching; therefore it is our task to make such applications as will restore the skin to normal.

At the beginning of treatment it is of prime importance that the necessity of absolute cleanliness should be remembered by both surgeon and patient.

The patient should be instructed to thoroughly cleanse the anal region after defecation, preferably with absorbent cotton which has been wrung dry of some antiseptic solution.

The parts should be protected from friction and the irritation of the discharge by wearing day and night an anal pad held in place by a T-bandage. The pad is best made with absorbent cotton wrapped with but one thickness of sterilized gauze. Too many thicknesses of gauze when ointments are used absorb the greasy portion of the ointment, and shortly the anal region becomes dry and coated with only its irritating mineral ingredients.

The methods of applying and removing ointments are such important matters that in the first few weeks of treatment the patient should be seen daily by the surgeon. To simply give instructions to use some of the ointment morning and night will inevitably result in failure.

Those cases in which the dermatitis is acute (eczema ani), accompanied by many excoriations from scratching and rubbing, require applications and ointments of a soothing and protective nature.

However, in the class of patients which are here especially referred to, the skin is nearly always tough and leathery and covered with dead and sodden epithelium.

The local appearance is very typical and once seen can never be mistaken.

The problem in these cases is to bring about a gradual destruction of this new formed epidermis, without too much inconvenience to the patient, and I know of no agents that serve the purpose better than nitrate of silver and citrine ointment (ung. hydrarg. nit.) rightly applied. Dr. Lewis J. Adler, Jr., of Philadelphia, first called attention to their use in the treatment of pruritus ani.

At the first visit the peri-anal skin is painted with a saturated solution of nitrate of silver. Provided any abrasions present are previously anesthetized with a 10% solution of cocain this should occasion no discomfort. The application of the silver should be repeated at intervals of four or five days until all the dead epithelium has been removed. After the silver has dried the anal region is smeared with citrine ointment. I have observed that individual skins differ in their reaction to this ointment and one should always be cautious when making a first application.

It is best to reduce the strength of the ointment by the addition of an equal quantity of lard for

³ Hill: Jour. Am. Med. Assoc., 1906, xlv, 585.

⁴ Stroud: Ann. of Surg., 1896, xxiv, 1.

the first visit, and then gradually, if the skin of the patient will permit, increase it to full strength. The ointment should be perfectly prepared, as any gritty particles render it unfit for use. The patient is seen daily for the first two weeks, and then every other day for a like period. After this, once or twice a week until the skin has regained its original color, suppleness and elasticity.

Ordinary cases may be cured in four weeks, yet one should be guarded as to prognosis, as stubborn cases will often require as many months.

During the past two years I have treated at my office and at the Boston Dispensary fifty-two cases of pruritus ani, and where the treatment has been conscientiously followed up I have had almost universal success.

To illustrate the methods of treatment five are selected at random and their histories and treatment briefly appended.

CASE I. Mr. S., age thirty-four, occupation, business man, was referred to me in April of last year. Had had pruritus for twenty years. During the past three months he could sleep but little at night because of the intolerable itching. He had been under treatment by a New York proctologist eight years ago, but had received no permanent relief.

Rectal Examination. — Numerous excoriations from scratching about the anus. Peri-anal skin sodden and blanched looking. Two large and one small external piles. Mucous membrane of anal canal congested and inflamed.

Treatment. — April 4, under eucain $\frac{1}{4}$ of 1%, the three external piles were removed, and a dry dressing was continued for six days. Then the following daily treatment was begun: The rectum was irrigated daily with boric acid solution. Every four or five days the skin about the anus for two inches was painted with a saturated solution of nitrate of silver. This last had to be repeated four or five times. A pad of cotton covered with sterilized gauze and smeared with citrine ointment was worn continually day and night for the next two months. The treatment was continued daily for two weeks, then every other day for the next two, and once a week for the next month.

Was under treatment two months in all, but the itching disappeared after the first two weeks' treatment. There has been no recurrence to date.

CASE II. March, 1905. Mr. S., age forty; lawyer. Symptoms began gradually a year and a half ago. Described in his own language they are: Feels as though there was something live under the mucous membrane. At times, especially after the bowels move, there is a "creeping" sensation just inside the anus. Cannot sleep nights. Has been the rounds of general practitioners and one rectal specialist. In fact, he has become neurotic on the subject.

Rectal Examination. — Greatly hypertrophied sphincters and four hypertrophied anal papillae.

These little growths were removed by the methods previously described, and Mr. S. has been free from rectal symptoms since.

CASE III. Another case similar to the one just reported was that of a Boston physician, forty-five years old, who had had pruritus for sixteen years. In this case there was an eczema involving the perineum and scrotum.

These papillae were discovered, removed, and the most distressing symptoms subsided at once, yet he even now occasionally has slight itching. His symp-

toms, however, were so greatly relieved that, being a very busy practitioner, he neglected then necessary after treatment which should have been undertaken to cure the eczematous condition of the perineum and scrotum.

CASE IV. Aug. 1, 1905. Dr. M., a dentist, thirty-eight years old. Had been a great sufferer from pruritus for twelve years. His itching was caused by very small superficial ulcerations (three or four) of the rectum and sigmoid. These were treated locally, and the external treatment was the same as in Case I. He was under treatment six weeks and has since remained well without treatment.

CASE V. Aug. 1, 1905. Mr. A., age forty, was referred to me for a very bad pruritus. He was a high liver and indulged rather freely in alcohol. Duration of disease three years. Did not get more than three or four hours' sleep at night. Of late has been sleeping in steamer chair aboard his yacht, as that is about the only way he gets any rest.

Rectal Examination. — Small posterior ulcer located between the sphincters.

Treatment. — His mode of living was not in any way interfered with. The small posterior ulcer was cured with lactic acid applications and the same external dressings as in Case I were used. There was no itching after the first week's treatment, and no recurrence to date. He was under treatment eight weeks.

The cardinal principles to remember in treating pruritus are:

Cure all affections of the anal canal and rectum, no matter how trivial they may seem, as they do cause an irritating moisture of the parts.

Maintain absolute cleanliness by protection of the parts from friction by the wearing of a T-bandage with a pad.

Make local applications for the restoration of the altered skin to normal, using strong caustics when required.

Clinical Department.

A CASE OF PSORIASIS CURED BY LAPAROTOMY AND CURETTAGE.

BY CHARLES P. SYLVESTER, M.D., DORCHESTER, MASS.

Mrs. E. H., twenty-seven years old, blond, always strong and healthy, except for constant leucorrhea following birth of child six years previous; bowels regular; fond of candy; menstruations normal, but rather free.

In March, 1903, she had severe attack of tonsilitis, which so closely resembled diphtheria that 5,000 units of antitoxin were given while awaiting culture reports, all of which were negative. Five weeks later punctiform macules appeared on face and body, scaly and itching, with lameness of muscles and painful joints. The patches slowly increased in size and number until pretty nearly the whole body, including scalp and face, and excepting palms and soles, was covered with the lustrous, scaly patches, some of which, around the umbilicus and sacrum, coalesced to form areas as large as the palm, while most of them did not enlarge to the size of a dime.

Different internal and external remedies were used without much effect, including mercury and potassium iodide, as the sore throat, followed by the eruption, suggested syphilis. The subsequent history, however, eliminated this disease. Vaginal examination revealed