different statutes regulating the practice of medicine. Yet the general government can not constitutionally undertake it. As is well understood, the general government has only such powers as have been delegated to it by the state and education is not one of such. This is one of the police regulations reserved by the several states as their own right, which, therefore, they jealously guard and are unwilling to surrender.

Without entering at all upon the question of the wisdom of such an arrangement, or attempting to decide between the conflicting interests of state and central government, we see no reason why the two might not enter into an agreement whereby the latter could attain its object without encroaching upon the rights of the former; why Congress could not appropriate a sufficient sum to be applied to medical education in each state, leaving to the states entire control thereof, and only stipulating as a condition, that a certain standard uniform throughout shall be maintained and (this is the important feature) that the graduate of the college should be allowed to practice without further examination in any part of the United States. Such appropriation might be applied to the state universities or to some other already existing college of medicine.

There have been for some years established throughout the United States so-called agricultural experimental stations, supported by the general government yet managed by the state. They have worked generally smoothly and have accomplished much good. We believe that a scheme of this kind applied to medical colleges would in a short time eradicate all the evils of our present system of medical education.

It would tend at the same time to advance the standard of the schools and to lessen their number and to render them uniform throughout the United States. As many of the states at present require all candidates to pass examinations, it is evident that those colleges whose graduates were entitled to practice in any state without undergoing these examinations, would have a great advantage over all others. The inferior institutions would necessarily go to the ground in a competition wherein they were so heavily handicapped. But there is no reason why the best class of schools should not continue to exist and thrive, even though they failed to obtain this particular state favor. Some are already so abundantly endowed and so well situated for giving clinical instruction, or have instructors and professors of such fame, that the students will be attracted thither in preference to the national college. Some would no doubt drift into the position of preparatory schools where the student can study more conveniently for a season or so, finishing only at that school which gives him the right to practice along with his diploma. But in order that it shall succeed in this capacity, it would have to model its curriculum after that of the state school, so that its students could enter the next class there without difficulty. Thus the state school would operate to bring about a uniformity in all schools, so that, sooner or later, we might have in the United States the same condition of things as at present exists in, for instance, Austria or Germany, where it is the custom for the student of medicine to divide his course of study among two or more schools in different parts of the country. It is possible, too, that under the system we suggest, certain institutions would become famous for certain special branches of medicine, as bacteriology or experimental medicine, and that some which are now giving a full course of study, would become post-graduate or polyclinic schools, to which students would

resort who wished to get increased clinical experience or to devote themselves to some special department of medical science.

In the course of this paper we have seen fit to institute certain comparisons which were intended to show that although we had made certain gains, the condition of medical education was still many steps in the rear of that of the countries of Europe. As the day seems now to have come when we no longer think ourselves too mean to be measured by an international standard, it seems to me that this comparison ought to have some force.

We have heard a great deal of talk lately about our financial system and of our standard of money; and we heard it urged on one side that we should have a money system that could stand alone and get along without the help of other nations, and on the other side, that we must have a standard that was good the world over, that would be accepted by any nation under the sun. We come now to appeal to the medical profession and to the people at large (who in fact, after all, are they who are most vitally concerned) that they shall adopt as broad views upon the subject of health as upon that of wealth; and that they shall not think more of dollars than they do of doctors; that they shall never cease their efforts until we have a system of medical education and a standard equal to the best, and until the products of our institutions, stamped as they are with the seal of government authority, shall no longer be discredited and regarded as spurious coin abroad, but shall pass current in any, even the most enlightened countries of the world.

FURTHER REPORT OF A PREVIOUSLY RECORDED CASE OF BLASTOMYCOSIS OF THE SKIN; SYSTEMIC INFECTION WITH BLASTOMYCES; DEATH; AUTOPSY.*

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WITH INTRODUCTORY NOTE BY THE ORIGINAL REPORTER.

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INTRODUCTORY NOTE BY DR. MONTGOMERY.

I reported this case before the meeting of the American Dermatological Association in 1900¹ as a case of blastomycosis of the skin (blastomycetic dermatitis of Gilchrist), in which death finally occurred from miliary tuberculosis of the lungs and other organs. In explanation, I would state that I was away from Chicago during the last weeks of the man's illness and at the time of his death. My friend, the late Dr. D. D. Bishop, in whose charge I left the case, wrote me that the autopsy showed the man died of miliary tuberculosis. Up to this time the diagnosis of the cutaneous lesions had not been definitely determined, though they had been carefully studied both clinically and histologically by a number of competent observers. The case was now considered an unusual form of cutaneous tuberculosis followed by systemic infection. I gave Dr. Bishop the privilege of reporting the case in full, but unfortunately, Dr. Bishop himself died before completing the work.

In January, 1900, Dr. Hyde and I had several cases of cutaneous blastomycosis under observation, the clin-

* Read before the American Dermatological Association, Chicago, May 31, 1901.

1. Transactions for 1900; and Jour. Cut. and Gen. Urin. Dis., January, 1901.

ical features of which suggested to us this old case. On inspecting my old slides of the case, I found characteristic organisms present in such large numbers that it is difficult to understand how they escaped the observation of the several pathologists to whom the slides had been shown four or five years before. I attempted to find the hospital and postmortem records, but these records could not be found. Several workers in the laboratory, however, remembered the case very well and assured me verbally that there was no question that the man had died of tuberculosis. One of these men, who was particularly interested in the case, stated he knew positively that guinea-pigs inoculated with the tissue had died of generalized tuberculosis. As after carefully searching several hundred skin sections I had found four or five bacilli which morphologically and in staining properties were identical with tubercle bacilli, I did not hesitate to accept the postmortem findings as reported to me. These few bacilli were, as I reported, found in a small abscess communicating with the surface of the skin and were undoubtedly the result of secondary infection. Such infection could easily occur in a moist fungous surface which had been exposed to the air for many months. I was satisfied (as were also Dr.

cutaneous blastomycosis has been followed by systemic infection with blastomycetes. (In the Busse-Buschke case² the cutaneous lesions were accompanied, if not preceded, by symptoms of chronic pyemia). For seven years the disease was limited to a single area on the skin and the man's general health was unimpaired. About eight months before he died, he began to have attacks of chills and fever, lasting four and five days, followed by the appearance of subepidermic swellings, some of which developed characteristics identical with those of the original lesion. Dr. Hyde, who followed the case carefully, believes with me that these manifestations marked the beginning of systemic infection. It is highly improbable that the new lesions were due to auto-inoculation through the skin, for the following reasons: They were preceded always by a marked systemic disturbance; they were distinctly subepidermic, the skin remaining unbroken until after the swellings subsided; they showed no central point where the inflammation (always subacute in type) was more intense, or where there was any clinical evidence of suppuration or necrosis; and, finally, during most of this period the cutaneous lesions were kept covered with antiseptic dressings, reducing the danger of auto-inoculation through the skin to a

Figure 1.

Hyde and others who had watched the case carefully) that this was a case of blastomycosis of the skin followed by secondary infection with tuberculosis.

After reporting the case, I learned that Dr. Walker had been associated with Dr. Bishop in working it up and had himself made the postmortem.* Dr. Walker's sections of lung tissue are full of typical blastomycetes, while diligent search on his part failed to discover tubercle bacilli. The evidence now presented by Dr. Walker shows conclusively that there was systemic infection with blastomycetes. There is no positive evidence obtainable of any tubercular infection aside from the few tubercle bacilli which I found in the cutaneous abscess. Moreover, the clinical history (see the previous report),¹ not only of the cutaneous affection but also of the early constitutional disturbance, and the manner in which metastases occurred were unlike those of tuberculosis.

This case is then of special interest because of its being the only case yet reported in which an undoubted

Figure 2.

minimum. (See original report¹ for details.)

The clinical histories of this case and of the one reported by Busse and Buschke,² together with the culture and inoculation experiments of Ophüls and Moffit,³ suggest strongly a close relationship between, if not the identity of, cutaneous blastomycosis and the cases of protozoic dermatitis reported by Gilchrist, Rixford, and others.

DR. WALKER'S REPORT.

C. W. T., aged 33, carpenter, admitted to Cook County Hospital in August, 1894, and remained two weeks, and was again admitted in March, 1895. Father died, aged 64, of heart disease; mother at 36 of consumption. Two brothers living and in good health; one died at 36 of heart disease. Three sisters living and well; none dead. Patient has been married 10 years; has had 6 children, 4 of whom are living, and in excellent health. He is a large, well-proportioned man, and has always been unusually strong and vigorous. No evidence of disease other than that of the skin can be found. No history nor evidence of syphilis nor of tuberculosis obtainable. Seven years previous to his first coming to the hospital, while wearing

* I also learned that the photograph I published had been taken by Dr. Walker. I had several photographs of the man and on selecting one for publication failed to recognize it as the one sent to me four years before by Dr. Bishop.

2. Virchow's Archiv, 1895, cxl, 23, and Verhandlung der Deutsch. Dermatolog. Gesellschaft, 1899.

3. Philadelphia Medical Jour., 1900, v, 1471.

a new woolen shirt which irritated his skin, he scratched himself and caused bleeding. The resulting lesion became covered by a crust, which when removed would reform. It slowly increased to the size of a silver dollar, then remained stationary for three years, then increased again. Medicines internally and local applications have been tried without limit and without avail. Patient says the lesions are practically painless, but tingling and smarting are occasionally felt. About October, 1894, the process began under the right eye, and in January, 1895, on the left temple, and in each place has spread rapidly. Has been able to continue working until July, 1894.

Present condition, March 8, 1895: Patient is fairly well nourished, heart and lungs are negative, pulse, temperature and respiration normal. The extent and location of the cutaneous lesions are indicated by the photographs. They consist of a verrucous tissue of purplish color, elevated at the highest points about one-half an inch above the normal skin. The tissue is soft, friable and spongy and pus can be squeezed from beneath it in droplets. Surrounding it is a purplish-red zone, about one-half inch wide, of normal texture. Toward the left side of the lesion on the back are a few patches, dry, smooth, but irregular and pink, where a thick, firm, scar-like tissue has formed. Scattered over the back, without any regular arrangement, but mostly on the right side, are a dozen or more nodules to be felt in the skin as firm bodies, slightly projecting, red in color and shading off gradually, the largest being the size of a small pea. They are tender on pressure and not ulcerated.

Operation: On March 16, eight days after admission to the hospital, under chloroform anesthesia, all the spongy tissue on each side of the face was curetted away and the base of each ulcer cauterized with the Pacquelin cautery. Wet boracic-acid dressings were then applied daily. Previous to the operation, the temperature was 98.6, pulse 72 and respiration 20. Nine days after the operation, the two areas presented clean granulating surfaces and were then covered with Thiersch's grafts, furnished by a friend of the patient. Up to this time the patient had shown no ill effects of the operation, but on the day of skin-grafting his evening temperature was 100.2, pulse 82, respiration 20. After this time, pulse, respiration and temperature were always above normal.

April 3, nine days after skin-grafting, eighteen after curetting: Union of grafts complete, dressings discarded. There is a row of new tubercles at the lower edge of the lesion on the right side of the face and one tubercle on the upper eyelid. Patient perspires profusely. Most of the spongy tissue on the back has disappeared, leaving large patches that have a smooth, red, moist surface. Margins are as before. There appears to be a slight dulness on percussion over the right upper lobe. No râles nor bronchophony. There have appeared a number of red papules, scattered over the back, firm and tender to touch. Urine negative.

April 8, twenty-three days after curetting: Each of the three smaller lesions on the back are now surrounded by a sharply-defined, narrow furrow, as though caused by pressure with the edge of the finger-nail. On the margin of the large lesion this phenomenon is seen only in places. Appetite continues to fail, emaciation is marked, temperature 102, pulse 120, respiration 36.

April 11: The papules on the back are breaking down. The periphery of each is marked by the gutter-like line above described. Dyspnea very marked; ophthalmoscopic examination negative; no tubercle bacilli in the sputum. It is worthy of special note that under no more aggressive treatment than daily wet boric-acid dressings, the large fungoid area on the back became a clean, though rather soft, granulating surface, the mass seeming to melt away. The margin, however, appeared to be unaffected by this treatment. In view of Dr. Nicholas Senn's diagnosis of tuberculosis, in which Drs. Hyde, Montgomery and Bishop were then inclined to concur, the incidence of post-operative dyspnea and associated symptoms naturally suggested the diagnosis of acute general military tuberculosis, which the subsequent course tended to confirm.

April 18, thirty-three days after operation, his wife took him home, where I continued to treat him. He died about ten days

after removal, forty-three days after operation. I was permitted to make an autopsy, but was limited to an abdominal incision of about four inches. Through this I removed pieces of the lung, liver, spleen and kidney, all of which were studded with miliary bodies, the lung surfaces being entirely covered by them, a finding which I erroneously concluded to be confirmatory of the diagnosis of acute general miliary tuberculosis, secondary to a cutaneous tuberculosis.

THE HISTOLOGIC EXAMINATION.

Repeated microscopic examinations of sections of the skin removed from the progressing margin of the lesion at the time of operation, which were made by Drs. D. D. Bishop, A. F. Lemke and myself, failed to demonstrate tubercle bacilli. This negative result, however, did not greatly disturb my allegiance to the diagnosis of tuberculosis, because those who had sought tubercle bacilli in cutaneous tissue by the methods then in vogue testified to the exceeding difficulty of finding them. It seems

Mr. Ready's. I did not know that Dr. Montgomery had recognized the nature of the case until after he reported it. I regret exceedingly not now being able to find tissue from the autopsy on this patient other than that from the lung, the other specimens having been lost.

REPORT ON PATHOLOGY.

We are indebted to Dr. Leo Loeb for the following report on the pathological histology of the lung:

"1. The lesions are distinctly nodular. The alveoli between the miliary nodules being normal or showing only slight pathological changes.

"2. In the nodules are the following changes: Most characteristic is the connective tissue proliferation, which in some places has so far advanced that fibrous nodules are formed. Connected with some of these fibrous nodules, we see areas of different sizes where the alveolar structure of the lung is still more or less pre-

Fig. 3.—Same field as Fig. 4. X 250.

Fig. 4.—Section of lung, showing blastomycetes, some of which are budding. X 600.

to me, as it has to others, more than probable that some of the cases that have resulted in failure to find tubercle bacilli have been instances of blastomycetic dermatitis. The same explanation, perhaps, accounts in some degree for the polymorphism alleged of cutaneous tuberculosis.

Fragments of tissue removed at the time of operation were used to inoculate two guinea-pigs. Nodular masses developed the size of a pigeon egg with the skin adherent over them. In fourteen days the mass in one animal ruptured and discharged a caseous plug, which resulted in recovery. The other died in twenty-three days, the autopsy revealing nothing but a similar, though firmer caseous mass at the site of the implantation.

I first suspected what proves to be the real nature of this case after reading the Owens-Eisendrath-Ready reprint and was convinced by comparing my slides with

served and the alveoli are partially filled with a granular material, partially with masses resembling fibrin, besides a variable number of mononuclear cells; but in the majority of the alveoli the connective tissue begins to grow into these masses.

"3. Some alveoli are filled almost entirely with cells resembling alveolar epithelial cells. Polymorphonuclear leucocytes are seen in places, but they are not present in large numbers.

"4. Necrotic areas occur occasionally in and adjacent to the fibrous nodules.

"5. Location of organisms: *a.* We find these only in the foci showing pathological changes, not in the alveoli that lie between these foci. *b.* In these foci we do not find the micro-organisms distributed equally

everywhere, but the large majority of them we find where connective tissue has been developed or is just developing. There are relatively few in the alveoli that contain only granular or fibrinous masses with a few cells. There are some areas several times the size of an alveolus which are almost filled with masses of the micro-organism. Such areas are found especially in the neighborhood of the larger vessels and bronchi. In the necrotic portions of the fibrous nodule we also find the remains of the organisms. *c.* Where large masses of the organisms are studded together, we see only little fibrillar material between, and the connective tissue distinctly invades these masses only at the margins. In other places where the organisms are less numerous, we find connective tissue frequently surrounding little heaps of them and penetrating some of the heaps. Individual micro-organisms are frequently surrounded by a layer of flat connective tissue nuclei. The organisms are often enclosed in giant cells, both in the fibrous nodules and also in the alveoli into which connective tissue penetrates. The situation of the micro-organisms in the giant cells varies. Sometimes they are at the periphery and the nuclei of the giant cells are in the center. Sometimes this order is reversed. Occasionally we find them enclosed in one large cell.

"6. We also find changes occurring in the organism itself. Usually it has a darkly staining center, taking up the nuclear stains. In some specimens stained with methylene-blue the peripheral part around the nucleus-like body shows many fine blue granules. In some organisms the central body takes up the stain only slightly or not at all. Occasionally we see budding organisms. Other organisms are seen with a central round body having a mulberry-like appearance with the segments of equal size. This appearance suggests the possibility that segmentation (sporulation) is taking place. But it is more probable that this is a change comparable to one not infrequently found in certain nuclei. No definite statement, however, regarding this can be made. The organism is normally variable in size. Further changes are the presence of very large bodies, whose diameter is two to four times as large as the ordinary ones. These usually do not show any special structure and are probably swollen degenerated forms.

"7. We see, therefore, that at this stage of the infection this micro-organism does not cause any tumor-like formation in the lung, not even an epithelial proliferation similar to the one found in the skin, but changes of an inflammatory character comparable to those found in tuberculosis of the lungs."

DISCUSSION OF OTHER CASES.

In operating in the manner I did, I acted upon eminently responsible surgical advice and in uncertainty as to the exact pathology. I now believe that this method is attended with too much risk of general dissemination of the pathogenic organisms, to warrant its adoption. Lassar, speaking of the treatment of these cases—regarding them, however, as tuberculosis—insisted very emphatically on a bloodless operation—the Pacquelin cautery. Caspar and Gilchrist say:⁴ "We had intended to place the patient under the influence of ether and curette the cutaneous lesions very thoroughly and then apply the nitrate of silver stick." The patient left the hospital and this was not done.

In 1895 Otto Busse published a case in Virchow's Archiv: A woman upon whose tibia a swelling ap-

peared, which was cut down upon eight months later by Helferich, an abscess cavity evacuated, and the abscess wall removed, together with the anterior edge of the tibia. Lesions of the face, neck, right ulnar and sixth left rib followed. The patient died five months after operation and the autopsy revealed numerous foci of disease in the bones and internal organs, from all of which the blastomyces could be cultivated.

Drs. Hyde, Hektoen and Bevan say:⁵ "The propriety of removing all the morbid tissue with the curette was discussed." It healed, however, under the administration of potassium iodid. Rixford and Gilchrist⁶ publish a case of protozoon infection, which began in 1886, and in 1894 all the infected areas, save one, were "most thoroughly scraped with a sharp spoon and 1-500 bichlorid applied." Cough developed, with purulent expectoration. Fine moist râles were general over the chest and it was thought that the patient had contracted tuberculosis. Death occurred ten and one-half months after operation, protozoa being found in most of the organs and lymph glands, being more abundant in the lungs than in the skin. Microscopically and macroscopically there was a strong resemblance to tuberculosis, but no bacilli were found. This case is here referred to because of general dissemination following within a few months the use of a curette on a skin lesion which had existed for eight years without constitutional disturbances.

I have cited these cases because of their relation to treatment and its results. Drs. Hyde and Montgomery are of the opinion that in the case here reported systemic infection was present prior to operation, as evidenced by the chills and fever, and by the manner in which new lesions developed at a distance from the original one. This is quite possible, and still the curettage may have hastened the termination of the case.

The value of large doses of potassium iodid, first noted by Dr. Bevan, has been demonstrated by a number of observers. In practically all cases it has produced marked improvement, and in several instances it has apparently caused a complete disappearance of the disease. Failing in medical treatment, the actual cautery or free excision with deep dissection and repairs by skin grafts or plastic operation should be the method of election and the curette eschewed as being fraught with too much danger.

A SERVICE VIEW OF HERNIA.

ITS PREVALENCE AMONG OUR TROOPS IN THE ORIENT.

E. F. ROBINSON, M.D.

KANSAS CITY, MO.

With the exception of gunshot wound, hernia is the commonest surgical condition that confronts the military surgeon in the Philippines. Among our troops in the Orient it develops as a tropical disease, and is now a condition to be reckoned with just as much as dysentery or typhoid fever. For while it rarely kills, it incapacitates. It puts men out of action, and so out of the service. With the immediate increase in our standing army and the thousands of raw recruits that will soon be ordered to foreign service, the importance of this subject will be greatly augmented, consequently the consideration of the question may not be *inapropos* at this time.

Unfortunately, there are at hand no definite statis-

4. Jour. of Experimental Medicine, January, 1898, "A Case of Blastomycetic Dermatitis."

5. Brit. Jour. of Dermatology, July, 1899, "A Contribution to the Study of Blastomycetic Dermatitis."

6. Johns Hopkins Hospital Reports, vol. 1, 1896.