sanitation are many, prominent among which are scarlet fever, measles, diphtheria, and lung diseases. The fact that the water-closets were ever placed in the school-house basements, from which the foul gases must of necessity arise to the rooms above, occupied by the pupils, proves the utter ignorance of those who had the matter in charge of the first principles of good ventilation and sanitary laws. Why the city fathers allow the water-closets to remain in the basement of any school-house to contaminate the air that five or six hundred school children are obliged to breathe, is a problem which admits of no satisfactory solution. This matter has been brought to the attention of both the school committee and the Board of Health during the past year, but without avail as yet. One of the teachers upon the first floor in one of the grammar schools told me that she noticed the odor from the water-closets below very perceptibly all through the warm weather. How many of the fathers of our school-children would tolerate such a state of things in their own houses? Yet hundreds of children are compelled to breathe for months pestilential odors that are infinitely more dangerous to health than half the nuisances brought to the notice of our local Board of Health.

Just here it might be well to allude to another item in which strange negligence exists. I have reference to the absence of fire escapes for the four-story school buildings, in which the only avenue of escape from the upper stories is down the main stairway, which would serve as a flue, with a strong upward draught, in case of fire. The building commissioner is instructed, I believe, to see that business and tenement blocks shall be properly furnished with fire escapes, if, indeed, there be not a law compelling him to, but I have seen no indication of any intention to provide school-houses with these means of safety and protection. A fire, as I am informed, did get quite a little start in one of the closets in the hallway of one of the grammar schools, which was discovered in its incipient stage, and hence was readily extinguished. Should a fire once get fairly started it would be next to impossible to save those in the upper stories. It certainly would seem as though the demand for fire escapes for school-houses was fully as great and urgent as for business and tenement blocks, if protection for human life is the primary object sought, as I understand it to be.

I have thus briefly called attention to several diseases and dangers attendant upon school life. I desire to put on record the statement that I do not hold the teachers responsible altogether for the matters under discussion, for I do not regard them as the authors of the rules and regulations by which the schools are governed. I believe that in the main they strive to do their duty conscientiously and well. Where there are from fifty to one hundred pupils in one room, under one teacher, she must deal with them collectively, as she has not the time to ferret out all individual peculiarities and claims. The fault lies more with the system than with the individual teacher.

The importance of improving the health and general physical welfare of the attendants upon the public schools cannot be over estimated.

Especially should ventilation and sanitation be thoroughly looked after by some one having sufficient knowledge to enable him to secure them, and determination to maintain them. Therefore I believe that there should be a medical inspector of schools appointed, whose duty should be to thoroughly examine

every school-house as often as once a month, for the purpose of obtaining exact information regarding their ventilation and general sanitary condition, and such officer should have the requisite authority to order any and every nuisance abated at once, and to enforce all needed sanitary regulations. To such an officer all cases of outbreaks of contagious and infectious diseases, as scarlet fever, measles, diphtheria, etc., might be referred, so that he could at once institute measures to prevent their spread. A rigid quarantine of all pupils afflicted with contagious diseases is as necessary as that a ship, trying to enter the port of Boston, New York, New Orleans, or any sea-port with cases of cholera, yellow fever, or small-pox on board, should be detained in strict quarantine until all danger is past. So, also, might be referred to this officer all parents who seek for any modifications of the rules of discipline in favor of their children on account of bodily weakness or mental infirmity, when he could investigate such cases, and report accordingly. Cases of pupils whose parents oppose vaccination on account of some real or fancied danger to bodily health, might, with great propriety, be left for the medical inspector to investigate and decide upon. Such an office as this, filled by a man who was clothed with the needful authority and power, and who would thoroughly, conscientiously, and fearlessly discharge his duty, would be of vastly more importance than that of janitor, school-house agent, not to say superintendent of schools.

HODGKIN'S DISEASE OR SCROFULA.¹

BY G. LIEBMANN, M. D.

THE following case came under my observation and professional care just one year ago.

On the 14th of April, 1881, living at Baltimore at the time, I was called to Boston to treat, in consultation with Dr. Sinclair, a young married lady, twenty-eight years old, who had been seen besides by Drs. Bowditch, Ellis, and Fitz. Upon my arrival, on April 16th, I elicited the following history:—

Patient had been married some seven years and six months, mother of three fine healthy children, had pneumonia when a child of tender age, but enjoyed tolerably good health up to her marriage and showed no constitutional taint with the exception of one or two enlarged glands in the right subclavian triangle when about seventeen years old. The three pregnancies brought great gastric trouble, nausea, and vomiting up to the close of the respective terms; nutrition suffered to a great extent; first and third parturition comparatively easy, second tedious, and had to be accomplished with forceps. The mother of the patient belongs to a rachitic family, she and several other members being affected with scoliosis and kyphosis; the father was a healthy robust man without any taint. The four or five years preceding the last and fatal disease patient was in poor health, suffered from dyspepsia, from repeated attacks of gastralgia, lost flesh, but was full of energy and sprightly when not in pain.

She took pepsin, bismuth, and soda, also cod liver oil, and improved under it; she also took iodide of potassium, which did not agree with her. In Novem-

¹ Read before the Suffolk District Medical Society, April 29, 1882.

ber, 1880, she spent a few weeks in Baltimore, Maryland, where she met with very inclement weather, also some days in New York, where the weather was colder still, and she came home to Boston with a troublesome cough and a menstruation nearing a menorrhagia. When in Baltimore she had already consulted Doctor Arnold on account of a string of glands on the right side of the neck. As mentioned above, the iodide which the doctor prescribed our patient had to abandon on account of its physiological effects. These glands disappeared though afterwards almost entirely, and were on the day when I came to Boston not larger than the size of a pea. From February, 1881, on, the strength of our patient failed more and more, emaciation increased, a cough set in whose paroxysms ended with the expectoration of a whitish froth. The glands on the left side of the neck enlarged now; tumors in both mammae made their appearance; appetite failed, nausea and vomiting were intolerable, sleep failed, and no anodyne seemed to do any good; pulse became frequent and feeble, there was dyspnoea and increasing adynamia. Dr. Bowditch, who saw the patient with Dr. Sinclair, on examination found some difference in respiration in the two lungs, and signs of an effusion in the left pleuritic cavity. Drs. Ellis, Fitz, and Sinclair found the same condition of things, and made the diagnosis of lymphadenoma with effusion. As I ascertained, the blood had been examined by them, and showed no increase of white corpuscles.

April 16th. *Status præsens.* I found patient lying on her left side, her only possible position, gasping for breath; respiration 40, speech impeded, pulse 120, small and feeble, temperature 101.5° F.; mind clear, panniculus adiposus reduced to a minimum, face distorted, anæmic. A conspicuous tumor, the size of a hen's egg, exists on the left side of neck, along the upper third of the inner edge of sterno-mastoid muscle and partially riding upon the muscle, consisting of three distinct glandular enlargements, hard, painless to the touch, and slightly movable; no swelling of the submaxillary glands; a string of enlarged glands was visible along the spine of left scapula, the largest being of the size of an almond, the smallest of a hazel nut. The axillary glands on both sides were swollen to a moderate extent, but the right thoracic glands formed again a string of tumors of more considerable magnitude, the one nearest the mamma being the largest, also hard, little, if at all, movable. There was also a bunch of glands on the posterior aspect of the neck, near the middle line, which were of rather small size. I noted hard masses, about three in number, in either mamma with infiltrations in the adjoining tissue, and the cutaneous veins over both mammae were enlarged.

The parotid, the submaxillary, inguinal, and popliteal glands were not affected. There was, however, a hardness of the entire right half of the abdomen, commencing on the left edge of right rectus muscle, occupying the right hypogastrium extending upwards to the lower edge of the liver, but not involving the latter, sensitive on deep pressure, and imparting to the palpating hands not the sensation of a peritoneal exudation, but of a tumor that could be grasped between the hands. These tumors are to be put down as retroperitoneal glands. Under the left costal arch there was to be felt a tumor of softer consistency and movable, but the most dependent segment of it could be made out, and this would recede most of the time on deep pressure. Whether this tumor was

a gland or the spleen was not to be determined with accuracy.

Thorax. The whole left half of thorax from the base of the lung up to the apex presented on auscultation entire absence of respiratory sounds and of vocal fremitus, perfect dullness on percussion, and a bulging out of the ribs posteriorly upon an area of the size of half a hand. The heart was dislocated to the right. The right side of the chest offered, with the exception of increased bronchial breathing, nothing abnormal.

The treatment at the time of my arrival consisted of the administration of Fowler's solution, which, however, was left off on account of the irritability of the stomach. Dr. Bowditch was again called in, and having convinced himself of the magnitude and rapid increase of the effusion, agreed with Dr. Sinclair and myself upon puncture of the pleuritic cavity. On April 20th this was done by Dr. Bowditch with his instrument, posteriorly, between the seventh and eighth ribs, and about three pints of straw-colored serum withdrawn. The heart's beat could be heard at once at its normal seat after the operation, also the respiratory murmur anteriorly and posteriorly from the apex of the lung down to the place of puncture, but below the latter there remained absolute dullness. There was, on the whole, no improvement in the subjective condition of the patient, and the following night brought the customary symptoms as nausea, vomiting, cough, and asthenia. Five days after this first tapping, which was done by Dr. Bowditch, I withdrew, in the presence of that gentleman and Dr. Sinclair, three and a half pints of serum, with no better results; eight or nine days afterwards I withdrew again about four pints, so that in all ten pints were taken from the chest. This time the chest did not fill again from the lower angle of the scapula upwards, but below it clear, sonorous resonance and distinct respiratory murmur never recurred up to the time of death. But there was and remained decided improvement in the physical signs anteriorly. The lung was apparently near the thoracic wall and had expanded, as there was a distinct sonorous and even tympanic sound on percussion and vesicular murmur. The impulse of the heart remained on the left side up to the last.

PROGRESS OF THE CASE.

In spite of this improvement in the chest the urgency of the subjective symptoms increased in progressive proportion. Sleeplessness was at first combated by the administration of chloral (thirty to forty grains at night), but the nausea and meteorism increased, the paroxysms of cough and expectoration, the attacks of syncope and collapse made it obvious to our minds that something new had to be done, to avert the very worst. Doses of bromide of potassium brought no relief either, and so the hypodermic injection of sulphate of morphia was decided upon. The first dose was a quarter of a grain of Magendie's solution. This brought instantaneous relief. All the above symptoms vanished. The skin, that had been icy cold and clammy, became warm, and a welcome sleep ensued after two or three hours of the most pleasant sensations. This sleep lasted twelve hours, with few interruptions, and even after awakening our patient remained comfortable for seven more hours. The most remarkable effect of the subcutaneous injection was the rally of the digestive powers of the stomach. Hungry our patient always

was, but to satisfy that desire meant inexpressible agony. Now her stomach would tolerate the heaviest food, chicken, steak, fried frog, vegetables, etc. But nineteen hours having elapsed since the first injection, the relentless enemy came on again with renewed energy and brought agony to the poor young patient and chagrin and dismay to her friends. Suffice it to say, that in spite of our reluctance, we had to keep up the hypodermic medication, the painless intervals becoming shorter, and the chances of recovery for our patient impossible. Quite against expectation the doses of the drug when increased brought not proportionally longer rest or sleep, but on the contrary produced more nausea and suffering. The best dose was from three to four drops injected every four hours. When life would seem to ebb away, when the surface of the body was icy cold, when lips and face and hands were livid, those few drops, would, as it were, infuse new life into the dying woman, revive the pulse, bring warmth to the cold surface and comfort to a human being that half a minute ago was apparently on the brink of death. This was the course of the dreadful disease up to June 23d. From that day on the middle and lower lobe of the right lung showed signs of pneumonia (dullness and crepitus). The bulging of the ribs posteriorly on the left side was still conspicuous, but the area involving it more sonorous, corresponding to the posterior axillary line; a bunch of enlarged glands on the left scapula below the spine became more distinct, of the size of a duck's egg, two of smaller size and elastic. The fever since April 16th up to date had always been moderate, the temperature ranging between 99.8° F. and 102.5° F., with intervals of apyrexia of sometimes a day or a day and a half. As a new symptom, occurring on June 29th, might be mentioned a white, doughy swelling of the right arm and hand, painless, pitting on pressure, the limb resembling milk leg. The radial pulse on the corresponding side being equal in force to that of left side, thrombosis of the artery had to be excluded, and venous thrombosis had to be diagnosticated. There was no doubt compression of the right axillary vein by an enlarged gland. This swelling never went down again. Pulse 120, respiration 22. One of the enlarged left axillary glands now commenced to suppurate; but the abscess did not involve the base of the gland. Spontaneous evacuation of thick grumous pus, the discharge becoming more and more thin and offensive.

A larger thoracic gland, situated in the right anterior axillary line one and a half inches distant from the mamma, now became painful and in a few days fluctuating. This abscess involved the whole gland from the surface to the base. Great restlessness; temperature 103° F.; mental disturbance, delirium, hallucinations. Poultices of corium maculatum and flaxseed to the abscess.

June 27th. Pulse feeble; temperature 99.5 F.; mind confused, meteorism. General outlook alarming. Abscess very painful.

June 28th. Same condition. Pulse 136. Livid lips and extremities. Right arm enormously swollen.

July 1st. Pulse threadlike; jactitation. Abscess very red, shining. Incision. Discharge of pus and blood; pus not as grumous as that of first gland.

July 2d. Had a better night. Improvement of pulse in tone; mind clear; no other improvement except better rest.

July 4th. Had a fair night. Signs of effusion

also in right pleuritic cavity. Dyspnoea great. Patient occupies the sitting position with head hanging forward and over. Cyanosis increased.

July 5th. Increasing prostration. Dyspnoea less. The two abscesses still discharge. Integument over the tumor in right mamma discolored; tenderness on pressure over the spot.

July 8th. Hypodermic administration of iodide of potassium with Magendie's solution.

July 9th and 10th. The only apparent effect of it, is increased diuresis; prostration very great; pulse 130; some ascites; oedema of feet.

July 14th. The iodide of potassium injections discontinued on account of increased prostration of patient.

July 16th. Death. No autopsy allowed.

DIAGNOSIS AND REMARKS.

What should we call the disease whose history we gave above in the absence of an autopsy?

There are but three diseases which, in the light of the symptoms, come in for a share of consideration: (1.) Leucocythemia (glandular and splenic). (2.) Lymphadenoma (Hodgkin's disease). (3.) Scrofulous glandular disease.

Leucocythemia has to be excluded for the following reasons: there was no excessive (relative) production of leucocytes, which is the chief element of the disease; the blood, when examined, had not the characteristic appearance of leucæmia, that is, a pale, pus-like color but, on the contrary, was red and natural looking; furthermore, the anæmia came on *after* the development of the glandular tumors, whereas in leucæmia it precedes the glandular enlargement.

Lymphadenoma. Although I was and am still inclined to diagnosticate the case as one of scrofula, I must admit that the symptoms point forcibly to lymphadenoma. The *number* of the glands enlarged, the pleuritic effusion, the anæmia in the wake of the development of the tumors, the symptoms of pressure, speak forcibly for Hodgkin's disease. Furthermore, it is held by Bartholow that those very symptoms of pressure of viscera and of large vessels are absent in scrofula. How far this is correct we shall examine further on. There is, however, *one* negative *pathognomonic* feature dwelt upon by modern writers, and especially by Gowers, as characteristic of lymphadenoma, which was not present in our case, and that is the disinclination of the enlarged glands to suppurate. In fact the enlarged glands never suppurate in lymphadenoma. They may become larger and smaller, they may become hard when soft at first, and *vice versa*, but they do not break down. Now, in our case, two of the glands formed abscesses, giving outlet to a thick, grumous pus, intermixed with curd-like flakes. The abscesses never healed, and, in all probability, had the patient lived longer, there would have formed another abscess in one of the tumors of the right mamma, for discoloration of the skin and softening of the mass, accompanied with tenderness, commenced soon after incision of the second glandular abscess. Now, in the light of this, is not the doubt justifiable whether our case was one of lymphadenoma? and whether there was not another malady than lymphadenoma running its course under the disguise of it? and if it was not a case of lymphadenoma, what was it?

If leucæmia and Hodgkin's disease have to be excluded, the case was one of scrofulous glandular dis-

ease. Although, as I mentioned before, some authors hold that there is neither anæmia nor pressure symptoms, nor such a general extent of enlarged glands in scrofula, there is a case on record; I mean the celebrated case of Morgagni, which is pretty well authenticated, and which would go a great way to overthrow those statements. Morgagni describes his case as follows: The case was that of a boy, aged fifteen, who observed the enlargement of the glands of the neck three months after a severe mental shock. The glands beneath the jaw, in the neck and the thorax, were all enlarged, and tumors of the same character existed in the integuments of the abdomen and in the abdominal cavity. The progress of the disease was rapid, and accompanied with fever. After death the tumors were found full of whitish matter, fluid in some and solid in others, and some were suppurating. The whole omentum was full of strumous tubercle, and masses, from a hen's egg to that of a pigeon's in size, occupied the peritonæum, pancreas, and mesentery. There were also apparently similar growths in the tissue about each kidney. The glands in the small intestines were enlarged. One tumor, as large as a hen's egg, existed in the mediastinum, and compressed the trachea; strumous tumors were situated in the costal pleura. Hard and stony globules, the size of grains of barley, were on the surface of the lungs. Here we have numbers of enlarged glands over a large extent of the body, strumous, caseous, suppurating, intermixed with the *hard*, even stony, growths, as in lymphadenoma, and yet everybody who reads the above description of the case must admit the scrofulous nature of the tumors. But still there were the symptoms of visceral pressure, of rapid failure of vital force, and as great a number of enlarged glands as in true lymphadenoma. There is another case of scrofulous, glandular disease on record by Mosler. The child (of scrofulous heredity) suffered, when nine months old, from *suppurating* enlargements of cervical glands, and when two years old presented *indolent*, glandular enlargements, of the consequences of which he died later on, when five years old. There were hard growths found in the kidneys, but the spleen presented, as is sometimes the case in lymphadenoma, numbers of small, spherical, yellow nodules, such as are met with in tuberculous disease. Here the glands first affected suppurated, while those subsequently diseased presented all the characteristics of lymphadenoma. Our case belongs to the same category, and in the light of the rachitic heredity, of the suppurating of some of the glands, and, as compared with the cases of Morgagni and Mosler, must be called a *case of scrofula complicated by lymphadenoma*. Gowers speaks of cases of lymphadenoma complicated by scrofula and tuberculosis, but in these the scrofulous or tuberculous features stand in the background, whereas in *our* case, as in those of Morgagni and Mosler, the scrofulous characteristics prevail. That lymphadenoma and scrofula (respectively tuberculosis) are more intimately related to each other than is generally admitted, might be demonstrated by Mosler's case, where suppurating scrofulous glands, indolent lymphatic glands, and tuberculous growths were found in the same subject.

The investigations of Dr. Chiari as to the metamorphosis of miliary tubercle throw still more light upon this subject. Chiari says: "There is a type of miliary tubercle that I call the *lymphoid* tubercle, which contains mostly small, round, *lymphoid* cells, a few giant cells being interspersed."

And what do we find in lymphoma? The enlarged glands contain a great quantity of lymph corpuscles, which gradually displace the septa, and give the glands a homogeneous appearance. Thus we actually find a histologically similar condition in both diseases, which makes me think that the co-appearance of both in one subject, met with rather frequently, is more than accidental.

REPORT REGARDING THE ADULTERATION OF FOOD AND DRUGS.

BY B. F. DAVENPORT, M. D.

THE late Legislature passed, and on May 26, 1882, the Governor approved, the following bill, which is based upon the draft for such a bill prepared by a committee of experts at the request of the National Board of Trade, and approved by that body at their convention in Washington, December 13, 1880. During 1881 very similar bills were passed in the States of New York and New Jersey.

SECT. 1 provides that no person shall manufacture or sell any drug or article of food which is adulterated within the meaning of the act.

SECT. 2. The term "drug" as used in this act shall include all medicines for internal or external use, antiseptics, disinfectants, and cosmetics. The term "food" as used herein shall include all articles used for food or drink by man.

SECT. 3. An article shall be deemed to be adulterated within the meaning of this act, —

- (a.) In the case of drugs, —
 - (1.) If, when sold under or by a name recognized in the United States Pharmacopœia it differs from the standard of strength, quality, or purity laid down therein;
 - (2.) If, when sold under or by a name not recognized in the United States Pharmacopœia but which is found in some other pharmacopœia, or other standard work on *materia medica*, it differs materially from the standard of strength, quality, or purity laid down in such work;
 - (3.) If its strength or purity falls below the professed standard under which it is sold: —
- (b.) In the case of food, —
 - (1.) If any substance or substances have been mixed with it so as to reduce, or lower, or injuriously affect its quality or strength;
 - (2.) If any inferior or cheaper substance or substances have been substituted wholly or in part for it;
 - (3.) If any valuable constituent has been wholly or in part abstracted from it;
 - (4.) If it is an imitation of, or is sold under the name of, another article;
 - (5.) If it consists wholly or in part of a diseased, decomposed, putrid, or rotten animal or vegetable substance, whether manufactured or not; or, in the case of milk, if it is the produce of a diseased animal;
 - (6.) If it is colored, coated, polished, or powdered, whereby damage is concealed, or if it is made to appear better or of greater value than it really is;
 - (7.) If it contains any added poisonous ingredient, or any ingredient which may render it injurious to the health of a person consuming it.

The State Board of Health, Lunacy, and Charity may from time to time declare certain articles or preparations to be exempt from the provisions of this act; and the provisions hereof shall not apply to mixtures or compounds recognized as ordinary articles of food, provided that the same are not injurious to health, and are distinctly labeled as mixtures or compounds.

SECT. 4. The State Board of Health, Lunacy, and Charity shall prepare and publish from time to time lists of the articles, mixtures, or compounds declared to be exempt from the provisions of this act, in accordance with the preceding section. The said Board shall also from time to time fix the limits of variability permissible in any article of food, or any drug, or compound, the standard of which is not established by any national pharmacopœia.

SECT. 5. The State Board of Health, Lunacy, and Charity shall take cognizance of the interests of the public health relating to the sale of drugs and food and the adulteration of the same, and shall make all necessary investigations and inquiries