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Medical Progress.

PROGRESS IN TUBERCULOSIS: A COLLECTIVE ABSTRACT OF IMPORTANT ARTICLES PUBLISHED DURING THE YEAR 1916.

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AND
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THERE is so much written on the subject of tuberculosis every year that only the more striking articles and, naturally, those that, in our opinion, were of special importance can be mentioned, and these only briefly. A fairly complete list of references will enable anyone who wishes to go further into the subject to do so without difficulty. The articles reviewed naturally fall into two groups,—those dealing with tuberculosis in adults and those dealing with children, with various subdivisions in each group.

TUBERCULOSIS IN ADULTS.

Early Diagnosis.

It is evident from the articles on this subject that the importance of early diagnosis is coming to be more clearly recognized than ever, and especially the difficulties involved therein. Special tests are of value, but time, patience, and common sense are above all other factors in importance.

Farris¹⁷ emphasizes the fact that early diagnosis is absolutely essential, but that it takes

patience and painstaking skill to make such diagnoses properly. He reviews the details necessary in this work and mentions those special procedures to which he attaches importance.

Probst,⁵³ discussing why early tuberculosis is so frequently not recognized, believes that it is because of ignorance, cowardice, or carelessness on the part of the patient, or on the part of the physician. He makes a plea for a special professorship of tuberculosis in our medical schools, and urges further study of the subject.

Fishberg¹⁹ urges conservatism in making early diagnoses. From the social and economic standpoint, a diagnosis of tuberculosis is a serious affair. It is a traditional fallacy that every case of tuberculosis, if taken in time, can be cured. He believes that there are many non-tuberculous patients in our sanatoria. The stigma of tuberculosis is a serious matter. Suspects should be kept under observation and not immediately rushed off to a sanatorium.

Perkins⁴⁹ discusses the various conditions that may present symptoms of tuberculosis and lead to errors in diagnosis. He protests against the common practice of calling all these patients tuberculous on the ground that they may be so, and that in any event treatment as such will do them good.

Hawes²⁷ urges that each patient suspected of having pulmonary tuberculosis be treated as an individual, and not diagnosed as such according to any routine standard. Constitutional signs and symptoms are of more importance than signs in the lungs. The diagnosis must not be hurried, nor must the physician make up his mind beforehand as to the diagnosis. The early

diagnosis requires patience, perseverance, boldness, and, above all, common sense.

Abrahams¹ reviews carefully and in detail the symptoms of incipient tuberculosis and the finer points of auscultation and percussion. He believes (and many will agree with him) that the microscope and the x-ray are more ornamental than useful in this stage of tuberculosis, and frequently delay treatment by their negative results.

Dutton¹⁵ emphasizes the amount of care and skill required to make a correct diagnosis of early tuberculosis. He makes the remarkable statement that percussion is of no value, and that the ear alone is better than the stethoscope. He makes an urgent plea for early diagnosis, but many of his statements would hardly bear analysis.

Gilbert²⁴ discusses early diagnosis and the various special tests now available to help in such diagnosis. He depends more on the results of careful, detailed history-taking and examination than on any special tests.

Parfitt⁴⁸ calls attention to those cases in which the diagnosis of tuberculosis is evident, but in whom some other process is of more importance. Among other conditions, he mentions chronic bronchitis, sinusitis, bronchiectasis, rhinitis, and other conditions of the respiratory tract; complications elsewhere, such as appendicitis, pelvic disorders, and other pathological abdominal conditions, may be of still greater importance.

Barber,⁵ discussing the early diagnosis of tuberculosis as it relates to the Navy, finds a discouragingly small decline in the incidence of this disease during the past seven years. It is in the recruiting service that the first steps must be taken to reduce this high incidence. The presence of tubercle bacilli in the sputum is not an early sign, and is no longer a requisite for diagnosis.

Hawes,²⁸ basing his conclusions on a comparative study of the results of 700 consumptives diagnosed by Massachusetts physicians in 1912, and the results of diagnosis in a similar series in 1915, is able to show distinct improvement in diagnosis and, especially, a great increase in the number of patients who underwent examinations as a routine and before they suspected that they had consumption. Even as late as 1915, however, out of 500 patients, over 50% were not made to understand that they had consumption.

Kahn³¹ discusses newer laboratory methods in the early diagnosis of tuberculosis, and comments briefly on their value. The various tests relating to sputum, such as the presence of albumen, ferments, salicylic acid and glycogen tests, he finds of little value; the Arneith classification is too elaborate and the complement-fixation test still in its experimental stage.

Hamblet and Barnes²⁶ have made an extensive study of the sputum of sanatorium patients, especially those with sputum negative to tuberculosis, with a view of determining how far in-

fluenza simulated tuberculous processes in these patients. From a study of 300 sanatorium patients, extending over four years, they find no evidence that influenzal bronchitis frequently simulates or complicates pulmonary tuberculosis.

Lord³⁷ reviews 549 cases of hemoptysis. Pulmonary tuberculosis occupies first place as a cause; chronic passive congestion, second; and lobar pneumonia, third. Other causes were infarct, aneurysm, new growths, and abscess.

Blaine,⁷ discussing the value of the x-ray, states that this method occupies no niche of infallibility, nor does it displace other physical signs; it must be considered with them. He believes that there are signs obtainable by means of x-ray examination which, when taken together and carefully considered, enable us often to diagnose incipient tuberculosis before it can be determined by any other method. Many would consider this too sweeping an assertion.

McCrae and Funk³⁹ describe in detail five cases of apical bronchiectasis. Tuberculosis was associated in four of these cases. They discuss in detail the difficulties of diagnosis. It might well be imagined that in those cases associated with tuberculosis a diagnosis during life of apical bronchiectasis was not only difficult but impossible.

Lapham³⁵ urges the importance of the study of tuberculous bronchial glands as the original focus of a subsequently developing pulmonary tuberculosis. She discusses the diagnosis of this condition, and advises no doctor to state that a child's lungs are negative simply because he can find no evidence of pulmonary involvement.

Treatment.

Townsend⁶⁰ sums up the advantages of early sanatorium treatment as follows: (1) Careful supervision by experts. (2) Reduction of cost to patient and to the community. (3) Formation of new, healthy habits, and character. (4) The creation of missionaries who spread the gospel of right living in the community in which they live.

Rockhill⁵⁴ believes that sanatorium treatment is far superior to home treatment of consumptives and, further, that climate plays only a very small part in the treatment. Judicious teaching of the patient is a necessary part of the treatment of tuberculosis.

Bay⁶ discusses that most difficult of all problems that superintendents of large state and city sanatoria have to meet, i.e., that of getting the patients to work, so that they are mentally and physically equipped to take up some occupation after leaving the sanatorium. The article is of distinct interest and value.

Minor⁴⁴ urges the use of judgment and common sense in employing rest and exercise in the treatment of pulmonary tuberculosis and the avoiding of extremes in either direction. The

guides in this are temperature, pulse, cough, and expectoration, weight and fatigue.

Frazer²¹ believes that a thorough knowledge of the principles of rest and exercise must underlie the treatment of tuberculosis. Rest and exercise must be carefully prescribed, after due consideration of all symptoms. Exercise is to be increased only very gradually.

Fish¹⁸ discusses climate and tuberculosis in a sensible manner and urges that every factor—financial, temperamental, and physical—be considered before sending a patient away. "There is no one best climate for all cases," he wisely observes.

Mills⁴³ discusses the question of climate and tuberculosis from the general point of view of: (1) the physical condition of the patient, (2) the economic circumstances, (3) the place to send him. He is an enthusiastic believer in the climate of New Mexico and western Texas as being the best in most cases.

Pottenger⁵¹ discusses the treatment of various forms of cardiac weakness in tuberculosis. Although he mentions the use of digitalis, caffeine, and other drugs, rest in bed is the most important factor in the treatment of this condition. This he wisely emphasizes.

Shortle⁵⁸ describes the widely varying methods of treatment of pulmonary hemorrhage and his own way of handling this complication. Mental and physical rest is essential. Inhalation of chloroform to lower blood pressure, followed by injection of pituitary extract for the same purpose, is then given. Codeine is better than morphine. Epsom salts are freely given, and gelatin is given three times daily.

Browning¹¹ calls attention to the part played by diseased and carious teeth as foci of infection and portals of entrance in tuberculosis work, and urges that adequate attention be paid to the teeth of all children.

Bonime,⁹ evidently an enthusiastic believer in tuberculin, states that he is convinced that in tuberculin we have a positive agent in the cure of tuberculosis, and especially in non-pulmonary disease. Like all enthusiasts, he goes too far and claims too much.

Brosamlén¹⁰ measures the improvement his patients make under treatment with tuberculin by the increase in the number of eosinophiles in the blood after an injection. It might be taken for granted that simpler and safer methods of noting improvement are usually available.

Arkin and Corper² fail to find reliable evidence to prove that arsenic has a specific action against tubercle bacilli.

Gardner²³ believes that heliotherapy is now on a firm scientific basis and that, if used with caution and patience, it will prove of value, not only in non-pulmonary, but also in certain cases of pulmonary tuberculosis.

Spaulding⁵⁹ discusses the general subject of heliotherapy and reviews the recent work on this subject in a concise and practical way.

Kime³² urges that sunlight be used more than it is in the treatment of skin diseases and of various forms of tuberculosis. While presenting nothing new, the article is sane and sound.

Farmer,¹⁶ reviewing the general subject of artificial pneumothorax, concludes that, when carefully and properly performed according to the best technic, it is a safe procedure; that it may greatly benefit certain cases not showing improvement by ordinary methods, but that it should be performed before the patient is in a hopeless stage.

Peters,⁵⁰ evidently an ardent believer in artificial pneumothorax, reports the results of his four years' use of this method. He believes that this is "the greatest weapon against tuberculosis that has yet been given the unfortunate consumptive."

Armstrong³ writes more conservatively in regard to artificial pneumothorax than the majority, and his paper is welcome on that account.

Lapham,³⁶ well known as an enthusiastic believer in artificial pneumothorax in the treatment of pulmonary tuberculosis, states her views on the subject and, going still further, urges more careful study into the possibilities of the surgical treatment of consumption.

Packard⁴⁶ cites, in great detail, a case of pulmonary gangrene of which artificial pneumothorax seems to have been the immediate cause.

Parfitt,⁴³ in a detailed and careful article considering the relation of pressure in inducing artificial pneumothorax, advises that not only the effect of pressure in the lung itself be considered, but also the effects on the mediastinum, heart, and blood vessels. He discusses the indications of mobility of the mediastinum.

Pathological and Bacteriological Studies.

Miller,⁴² discussing the value of the complement-fixation test in tuberculosis, concludes that it is practically always positive in tuberculous and negative in non-tuberculous cases. It is negative to syphilitics who have no clinically active tuberculosis.

Corper,¹⁴ as the result of an elaborate study of the complement-fixation test in tuberculous and in normal persons, finds it positive in only 30% of clinically definite cases of tuberculosis, active and inactive; but a definite positive reaction, in conjunction with other findings, makes the diagnosis certain. It is also of value in differential diagnosis, as against syphilis, cancer, abscess, etc. In non-tuberculous cases it is always negative.

Krause,³³ as a result of his investigations, has shown that tubercle bacilli can preserve their viability and their original resistance after being kept in a dried state for as long a time as from 15 to 17 months.

Krause³⁴ discusses the intricacies of the tuberculin reaction, and suggests that the symptoms of the general tuberculin reaction are due

to the primary toxicity of focal products, the absorption of which is favored by the focal reaction that results from the injection of tuberculin.

Heise,²⁰ discussing the cutaneous tuberculin reaction, comes to the conclusion that the quantity of tuberculin necessary to produce a reaction of a given area bears no definite relation to the stage of the disease, and that, therefore, a single skin test, when positive, means nothing but the existence of a previous infection.

Economic, Social and Educational.

Baldwin,⁴ discussing the consumptive and his neighbors, shows how much harm and unhappiness may be caused by the stigma of tuberculosis when unjustly applied. He protests against a state of affairs that stamps the tuberculous patient as an outcast and a leper, and is of the opinion that the present attitude of the public in this regard is in no way justified by the facts.

Maher³⁸ describes the various fields of work being undertaken by the physicians at the Connecticut state sanatoria. Such original investigations and researches should form an important part of the work of every sanatorium physician, and are of great value not only to the institution, but to the medical public.

Gwynn,²⁵ making an urgent plea for the conservation and protection of the health of school children, gives as necessary parts of any movement in this direction: (1) a full-time supervision, (2) more school inspection and nurses, (3) more fresh-air rooms and open-air schools for both well and tuberculous children.

Rucker,⁵⁵ discussing educational methods in regard to tuberculosis and the public, urges that modern advertising methods be used for this purpose just as they are so successfully used in business today. His article is full of practical suggestions.

Pierson⁵² urges further institutional care of consumptives and discusses subsidy laws to assist in this process.

Sachs⁵⁶ says the prevalence of tuberculosis is, to a great extent, indicative of the general standard of life in that district.

Non-Pulmonary Tuberculosis.

Furniss²² discusses renal tuberculosis, its diagnosis and treatment. It is a very chronic disease and apt to be latent for a long period. About one-third of patients first consult a physician for pain in the kidney region, and the rest for cystitis and vesical disturbances. Prognosis in cases operated upon is good as regards life, and fair as regards relief of symptoms.

Coleman,¹³ discussing renal tuberculosis, urges more care in referring symptoms related to the bladder to the real source of trouble,—the kidney. In 90% of cases presenting bladder symptoms, renal tuberculosis is the last disease to be considered.

Churchman¹² discusses the technic of diagnosis

of renal and genito-urinary tuberculosis. He is optimistic in regard to tuberculous renal disease, and deplors the present somewhat pessimistic attitude toward this condition.

Holding³⁰ is an enthusiastic believer in the use of the x-ray in the non-operative treatment of tuberculous cervical adenitis, and reports numerous cases with good results. He thinks that non-surgical methods, such as x-ray, hyperemia, and tuberculin should be tried before any radical operation is done. He claims rather too much for x-ray in this regard.

Boggs⁸ is of the opinion that when tuberculous glands in the neck have become unduly scattered and broken down, the x-ray is the best method of treatment, especially when there is pulmonary involvement. Surgery is necessary in some cases, but the number can be greatly reduced by means of the x-ray.

Metz⁴⁰ discusses with illustrative cases the various forms that tuberculosis may take in the eye. He describes the good results of treatment with tuberculin when other methods had failed, and the diagnosis by means of tuberculin tests.

Scott⁵⁷ describes in detail a case of tuberculosis of the tongue, and is of the opinion that it is more common than supposed. The differential diagnosis involves consideration of simple ulcers, syphilis, and malignant disease. The rational treatment is surgical except in far-advanced cases secondary to extensive pulmonary disease.

Miscellaneous.

Fishberg,¹⁹ in a somewhat iconoclastic article, protests against ancient and time-worn fallacies in regard to the diagnosis and treatment of tuberculosis. He urges that a sharp line be drawn between infection and disease; that the old idea that healthy adults may be infected in institutions and elsewhere be discarded; also, that if tuberculosis is discovered early enough it can be cured; that the word "pre-tuberculous" be done away with. He urges that more attention be given to constitutional signs and symptoms in diagnosis, and that in children more conservatism be used before saying a child is consumptive, and calls attention to the fact that chronic pulmonary tuberculosis in childhood is rare. Much that he says in this article is sane and timely; there is also much, however, that is dangerous doctrine to spread abroad among the general public and the medical profession.

Michie⁴¹ presents a careful study of the alarming conditions in regard to tuberculosis in an Eskimo village and one of the cleanest in Alaska. He found 61.5% of the children under 15 years of age to be actively tuberculous. He believes that here is one of the greatest fields for medical and missionary work.

Norris⁴⁵ brings up to date the important subject of pregnancy and tuberculosis from his experience in a large number of cases in private

practice and at the Phipps Institute. He finds that about 20% of mild quiescent cases and 70% of more advanced cases have exacerbations during pregnancy or the puerperium. Tuberculous women should not marry unless the process has been quiescent for a moderately prolonged period, and should not become pregnant unless the disease is in the first stage and has been quiescent for at least two years. Every case must be dealt with individually. Interruption of pregnancy does not insure a favorable prognosis, but greatly improves it. Infants should not be nursed by tuberculous mothers, and at all times should be especially guarded against infection.

REFERENCES.

- ¹ Abrahams, R.: N. Y. Med. Jour., July 29, 1916.
- ² Arkin, A., and Corper, H. J.: Jour. Infect. Dis., April, 1916.
- ³ Armstrong, A.: Penn. Med. Jour., January, 1916.
- ⁴ Baldwin, E. R.: Survey, Feb. 22, 1916.
- ⁵ Barber, G. H.: U. S. Naval Med. Bull., Vol. x, No. 1, 1916.
- ⁶ Bay, H. H.: Ill. Med. Jour., April, 1916.
- ⁷ Blaine, E.: Ill. Med. Jour., January, 1916.
- ⁸ Boggs, R. H.: N. Y. Med. Jour., May 29, 1916.
- ⁹ Bonime, E.: N. Y. Med. Jour., April 15, 1916.
- ¹⁰ Brosamlen, O.: Münch. med. Woch., April, 1916.
- ¹¹ Browning, C. C.: Pacific Dental Gazette.
- ¹² Churchman, T. W.: Med. Rec., March 11, 1916.
- ¹³ Coleman, C. A.: Ohio State Med. Jour., April, 1916.
- ¹⁴ Corper, H. J.: Jour. Infect. Dis., September, 1916.
- ¹⁵ Dutton, W. F.: Jour. of Oklahoma State Med. Assn., September, 1916.
- ¹⁶ Farmer, W. C.: Texas State Jour. of Med., December, 1916.
- ¹⁷ Farris, H. A.: Can. Med. Assn. Jour., December, 1916.
- ¹⁸ Fish, J. B.: Med. Rec., Sept. 30, 1916.
- ¹⁹ Fishberg, M.: Med. Rec., Jan. 22, 1916.
- ²⁰ Fishberg, M.: N. Y. Med. Jour., Dec. 2, 1916.
- ²¹ Frazer, Thompson: South. Med. Jour., July, 1916.
- ²² Furniss, H. D.: N. Y. State Jour. of Med., November, 1916.
- ²³ Gardiner, C. F.: Interstate Med. Jour., Vol. xxiii, No. 7.
- ²⁴ Gilbert, O. M.: Col. Med., October, 1916.
- ²⁵ Gwynn, W. C.: Jour. A. M. A., Nov. 11, 1916.
- ²⁶ Hamblet, M. L., and Barnes, H. L.: Arch. Inter. Med., September, 1916.
- ²⁷ Hawes, J. B.: 2d: BOSTON MEDICAL AND SURGICAL JOURNAL, July 27, 1916.
- ²⁸ Hawes, J. B.: 2d: BOSTON MEDICAL AND SURGICAL JOURNAL, June 1, 1916.
- ²⁹ Heise, F. H.: Am. Jour. Med. Sc., June, 1916.
- ³⁰ Holding, A. F.: Med. Rec., March 11, 1916.
- ³¹ Kahn, M. H.: Jour. Lab. and Clin. Med., Vol. i, No. 8, 1916.
- ³² Kime, J. W.: Med. Rec., February 12, 1916.
- ³³ Krause, A. K.: Jour. Med. Research, June, 1916.
- ³⁴ Krause, A. K.: Jour. Med. Research, June, 1916.
- ³⁵ Lapham, M. E.: Med. Rec., Aug. 19, 1916.
- ³⁶ Lapham, M. E.: Am. Jour. Med. Sc., March, 1916.
- ³⁷ Lord, F. T.: BOSTON MEDICAL AND SURGICAL JOURNAL, July 27, 1916.
- ³⁸ Maher, S. J.: Med. Rec., Aug. 3, 1916.
- ³⁹ McCrae, T., and Funk, E. H.: Jour. A. M. A., September, 1916.
- ⁴⁰ Metz, R. B.: Cleveland Med. Jour., September, 1916.
- ⁴¹ Michie, H. C.: Med. Rec., Oct. 14, 1916.
- ⁴² Miller, H. R.: Jour. A. M. A., Nov. 18, 1916.
- ⁴³ Mills, N. S.: Med. Rec., May 6, 1916.
- ⁴⁴ Minor, C. L.: Med. Rec., Oct. 7, 1916.
- ⁴⁵ Norris, C. C.: Am. Jour. Obst. and Dis. Women and Children, Vol. lxxiii, No. 6, 1916.
- ⁴⁶ Packard, E. N.: Am. Jour. Med. Sc., June, 1916.
- ⁴⁷ Parfitt, C. D.: Trans. Twelfth Ann. Meeting Nat. Assn. for the Study and Prevention of Tuberculosis.
- ⁴⁸ Parfitt, C. D.: Trans. of the Am. Clin. and Clin. Assn., 1916.
- ⁴⁹ Perkins, J.: Inter. Clin., Vol. iv, Ser. 26.
- ⁵⁰ Peters, L. R. S.: Ill. Med. Jour., October, 1916.
- ⁵¹ Pottenger, F. M.: Lancet-Clinic, Jan. 1, 1916.
- ⁵² Pierson, P. H.: Trans. Cal. Assn. for the Study and Prevention of Tuberculosis, Jan. 27, 1916.
- ⁵³ Probst, C. O.: Ohio State Med. Jour., December, 1916.
- ⁵⁴ Rockhill, C. S.: Lancet-Clinic, March, 1916.
- ⁵⁵ Rucker, W. C.: Jour. A. M. A., Nov. 11, 1916.
- ⁵⁶ Sachs, T. B.: Bull. Chicago Th. Institute, June 1, 1916.
- ⁵⁷ Scott, James R.: Am. Jour. Med. Sc., September, 1916.
- ⁵⁸ Shortle, A. G.: N. M. Med. Jour., October, 1916.
- ⁵⁹ Snauldine, H. J.: Jour. Med. Soc. of N. J., 1916.
- ⁶⁰ Townsend, D.: Can. Med. Assn. Jour., February, 1916.

TUBERCULOSIS IN INFANCY AND CHILDHOOD.

Methods of Infection.

Adriance,¹ in a practical and sane article of distinct value to the general practitioner, emphasizes the fact that tuberculous infection begins in early life in the home circle. A positive

von Pirquet reaction in early life signifies a bad prognosis. He speaks of the importance of milk as a factor in such infections and urges that the pasteurization of milk be generally adopted.

Minor¹⁶ strikingly emphasizes certain important factors in regard to infection with tuberculosis, such, for instance, as, "Tuberculous infection probably never, and certainly rarely, can occur outdoors," and that even indoors it usually takes a prolonged exposure under unsanitary conditions for *adult infection* to occur. He does not believe that the clean, intelligent consumptive is of danger to those in the house with him *if they are not* children or young people. He believes, therefore, that our attention should be focused on preventing infant and childhood infections, and that our chief problem lies in the question of protecting our children. Kissing children on the mouth should be prevented, milk should be pasteurized, coughing mothers and nurses should be examined; outdoor schools for well children should be encouraged, over-strenuous athletics discouraged. The doctor must not wait for symptoms to develop in the children under his care, but by careful supervision over their habits, school and home life, play and work, and by regular examinations should endeavor to prevent the occurrence of such symptoms. This article is full of sane and sound advice.

Pottenger²¹ discusses in detail the part played by the lymphatic system as a protective agent against tuberculous infection and disease. He makes a plea against too early removal of tonsils and adenoids.

Ravenal,²² discussing modes of infection, states that the intestinal tract in children is a frequent source and that, likewise, to him the tonsils appear to be the portals of entry in many cases.

Ustvedt²⁶ presents figures showing how much greater is the infant mortality in families where there is an open case of tuberculosis as compared with normal families. While his figures present nothing new, they emphasize the need of removing infants at once from a tuberculous environment. Such figures as here shown are of striking interest and should be utilized in educating parents as to the necessity of such removals.

Von Weller²⁷ reports two cases of military tuberculosis of the placenta, with clinical, though latent, tuberculosis of the mother. He concludes that the transmission of tuberculosis from mother to child prior to birth may not be so rare as usually thought to be the case.

Diagnosis.

Dana⁴ is of the opinion that the average general practitioner is not sufficiently impressed with the importance and frequency of tuberculous infection in childhood and, especially, of the difference between infection and disease. He urges that children "below par" for any unexplained cause be given strict hygienic treatment and careful examinations by an expert. He also

observes that in almost no case is x-ray evidence alone sufficient, and that it does not distinguish between latent cases and those needing active treatment.

Floyd, Boutwell and George⁸ have made a careful and exhaustive study of bronchial gland tuberculosis in a large series of children, with detailed x-ray studies, and have come to sane and sound conclusions. Percussion is of value in the larger masses of glands; d'Espine's sign need not be present in order to make a diagnosis, but only on a large number of comparatively minor signs and symptoms can a correct diagnosis be made. This article is of great importance and value.

Lapham¹⁵ discusses the symptomatology of bronchial gland tuberculosis and, especially, the relation of such enlarged tuberculous bronchial glands to acute fulminating cases of tuberculous meningitis. She believes that in almost every case careful post-mortem examinations will show a definite relation between the glands and the subsequently occurring meningitis. Likewise, she is of the opinion that spinal disease may be closely related to bronchial gland tuberculosis. She describes the various aches and pains of vague and indefinite nature that may be attributed to these glands by pressure or otherwise.

Morse,¹⁷ discussing d'Espine's sign, states that the normal change of voice occurs between the seventh cervical and the first dorsal spine. The d'Espine sign is positive, therefore, when the bronchial voice or whisper is heard below the seventh cervical spine. It is uncommon in children of the well-to-do and, when present, in them is probably not a manifestation of tuberculosis in more than 50%. It is to be doubted if even the opinion of such an authority as Dr. Morse would be concurred with by many of those who have studied this subject. Many believe, for instance, that an increased whispered voice or bronchial whispered voice may be heard as low as the third or fourth dorsal spine and be within normal limits, and that, *in the absence of other signs and symptoms*, the diagnosis of tuberculosis of the bronchial glands is not justified upon a positive d'Espine sign alone.

Overend and Rivière¹⁹ describe the location of the various glands around the root of the lung, and group them as follows, according to clinical manifestations: (1) normal, with no physical signs, (2) with right paravertebral dullness, (3) with double paravertebral dullness, (4) with parasternal dullness on one or both sides. They describe the features of each of these groups as seen by means of the x-ray. They conclude that thoracic glandular tuberculosis is very common in children of school age, especially in urban districts, but that there are, likewise, notable powers of resistance to control these infections, even extensive ones. They believe that both clinical and radiographic methods of diagnosis are of great and equal importance in diagnosis and should be used together in each case.

Reuben,²³ discussing the diagnosis of tuberculosis in infancy and childhood, is strongly of the opinion that fever is the first sign of such infection in infants, and that its course is a fairly typical one. In such cases, according to his experience, the tuberculin test usually becomes positive at the onset, or a few days after the onset, of the fever, although no physical signs are present at the time. He states that 30 to 35% of such infants survive these infections. The general trend of opinion would hardly support these statements either as to diagnosis or prognosis, although his ideas as to treatment are sound.

Smith and Bibby²⁴ always tried to answer the following two questions in every case brought to their clinic. Has the child been infected with tuberculosis? This is answered by the tuberculin skin test. Is the infection latent or active? This was answered by a careful study of the history, signs and symptoms which they describe in detail. Impaired nutrition, anemia, undersize, and failure to gain weight are important points. Fever, over a considerable length of time, is suggestive. Loss of appetite, fatigue, are valuable symptoms. Cough and positive chest signs are rare.

Weith,²⁸ discussing the greater incidence of tuberculosis in Lausanne, as compared with other Swiss cities, raises some interesting questions as to what is to be gained by applying the von Pirquet test to all the children in the city. In view of the fact that upwards of 90% of all children of school age are already infected and would thus respond to such a test, what in particular is to be gained by applying it? He believes, and rightly so, that of far greater importance than this is the elimination of the sources of infection instead.

Treatment.

Dowd⁵ reports on the results of 687 cases of tuberculous cervical adenitis treated by a radical operation. His results are good, and he is an enthusiastic advocate of this method.

Gauvain⁹ emphasizes the fact that heliotherapy alone cannot accomplish wonders, but that it should be used in conjunction with other methods of treatment. Beneficial effects cannot be obtained unless the skin is pigmented. He gives rules for treatment along the usual lines.

Golden¹⁰ urges more conservative treatment with tuberculin, hygiene, etc.; Morris¹⁰ likewise reports good results without radical surgery, using x-ray, tuberculin, and hyperemia.

Holding¹¹ is enthusiastic over x-ray and believes that conservative methods should be tried before radical excision.

Howell¹² believes that the primary lesion is represented by a mass of glands, usually around the roots of the lung. The three essentials of treatment are: rest until long after symptoms have disappeared, fresh air, and sunlight. He makes no mention of tuberculin in treatment.

The Weekly Bulletin of the New York Board

of Health for June, 1916,²⁰ describes a group of children under observation at an Italian tuberculosis clinic in New York City, who had been undergoing systematic and regular corrective gymnastic exercises during the year. Such classes and such exercises form an important part of preventive work among children.

Albert-Weil² believes in x-ray and conservation surgery.

Pathological and Bacteriological Studies.

Dunn⁶ discusses the source and mode of infection by tuberculosis in early life, with special reference to the work of von Pirquet, Ghon, and others. The diagnosis he bases in physical signs in the chest, such signs being absent in nearly 50% of his cases; tuberculin tests, these were negative in 50% of his cases, and x-ray examinations, which were positive in every case.

Eastwood and Griffith,⁷ in 261 cases of bone or joint tuberculosis, found the human bacillus in 196 cases, bovine in 55, and atypical forms in 10; in 155 cases under 10 years of age 29% was bovine; in 106 cases over 10 years only 9% was bovine.

Marfan,¹⁸ discussing the occurrence of tubercle bacilli in milk, urges that all cows' milk be boiled or pasteurized, as the most practical method of preventing this source of infection.

Social and Economic Problems.

Jeanneret¹³ believes that it is largely by means of the school and the care and instruction of school children in health matters that tuberculosis is to be stamped out. Between the years three and five the lymphatic system prevents any tubercle bacilli from entering the body. Such a child is not diseased, but merely infected or sensitized. It is our task to distinguish between those who are merely so infected and those who are actually diseased because the barriers of defense have broken down. He urges that each child have his health chart and that the von Pirquet test be applied once a year. He describes a system of gymnastic exercises performed in the open air, with the children's bodies stripped to the waist. Such exercises should be largely thoracic. Fully an hour every day should be devoted to this purpose.

Kingsley¹⁴ presents a program for the promotion of welfare of children and the prevention of tuberculosis among them. This work is along the following lines: (1) The creation of institutions and agencies for the care and relief of those who have tuberculosis and for safeguarding their families. (2) The conduct of a vigorous educational campaign, with especial reference to training and educating the child in matters pertaining to hygiene and physical welfare.

Stern²⁵ urges that measures be taken to decrease the mortality of tuberculosis among children of school age by improving the personal

and home hygiene. Teachers and social workers should play an important part in this work.

Prognosis.

While opinion differs as to the prognosis of tuberculosis in infancy, Combe³ is of the opinion that, while it is very grave, it is not absolutely fatal. The younger the child, the less the powers of resistance. The virulence of the infection is an important factor, while the clinical form of the disease is a still more important factor. If the disease, when discovered, is still localized to glands, the outlook is less serious.

Permin²⁰ believes that only during the first year of life does a positive skin test indicate a grave outcome.

REFERENCES.

- ¹ Adriance, Vanderpoel. BOSTON MEDICAL AND SURGICAL JOURNAL, Aug. 17, 1916.
- ² Albert-Weil, E.: Paris Méd. 1916, 6, 261.
- ³ Combe: Le Nourrisson, 1916, 4, 302.
- ⁴ Dana, H. W.: BOSTON MEDICAL AND SURGICAL JOURNAL, May 25, 1917.
- ⁵ Dowd, C. N.: Jour. A. M. A., 1916, 67, 499.
- ⁶ Dunn, C. H.: Am. Jour. Dis. of Children, February, 1916.
- ⁷ Eastwood, A., and Griffith, F.: Jour. Hygiene, 1916, 15, 257.
- ⁸ Floyd, C., Boutwell, H. K., and George, A. W.: International Clinic, Vol. iii, Series 26.
- ⁹ Gauvain, H. J.: Brit. Jour. Tub., 1916, 10, 111.
- ¹⁰ Golden, J. F., Morris, R. I., and Ladd, W. E.: Jour. A. M. A., 1916, 67, 508.
- ¹¹ Holding, A. F.: Med. Rec., 1916, 89, 471.
- ¹² Howell, W. H.: BOSTON MEDICAL AND SURGICAL JOURNAL, Sept. 21, 1916.
- ¹³ Jeanneret, L.: Rev. Méd. de la Suisse Rom., August, 1916.
- ¹⁴ Kingsley, S. C.: Jour. A. M. A., 1916, 66, 73.
- ¹⁵ Lapham, Mary E.: N. Y. Med. Jour., Oct. 21, 1916.
- ¹⁶ Minor, Charles L.: South. Med. Jour., February, 1917.
- ¹⁷ Morse, J. L.: Am. Jour. Dis. of Children, April, 1916.
- ¹⁸ Marfan, A. B.: Le Nourrisson, 1916, 4, 34.
- ¹⁹ Overend, W., and Rivière, C.: Arch. of Radiol. and Electrotherapy, August, 1916.
- ²⁰ Permin, G. E.: Hospitalstidende, 1916, 59, 697.
- ²¹ Pottenger, F. M.: Jour. A. M. A., Nov. 11, 1916.
- ²² Ravenal, M. P.: Jour. A. M. A., 1916, 66, 613.
- ²³ Reuben, M. S.: Arch. of Ped., March, 1916.
- ²⁴ Smith, C. J., and Bibby, H. L.: Arch. of Ped., 1916, 33, 782.
- ²⁵ Stern, E.: Ztschr. f. Tuberk., 1915, 24, 426.
- ²⁶ Ustvedt, Y.: Norsk Magaz. f. Laegevidensk., October, 1916.
- ²⁷ Von Weller, C.: Arch. Int. Med., 1916, 17, 509.
- ²⁸ Weith: Rev. Méd. de la Suisse Rom., Sept. 20, 1916.
- ²⁹ Weekly Bulletin of the N. Y. City Dept. of Health, June 17, 1916.

Original Articles.

THE RATIONALE OF NEURASTHENIA AND OF DISTURBANCES OF ARTERIAL TENSION.*

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THIS paper is written to emphasize, to revise and to enlarge upon certain ideas in a former paper entitled "Affective Activity, Emotion, as the Cause of Various Neurasthenic Bodily Diseases." † It will present the fundamental nature of real physical diseases. The medical profession has scarcely begun to appreciate the reality and the tremendous importance of neurasthenic, affective diseases. While their symptomatology is some-

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