T H E S I S

THE DIAGNOSIS OF EARLY TUBERCULOUS INFILTRATION OF THE LUNGS IN YOUNG ADULTS

by

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I N D E X.

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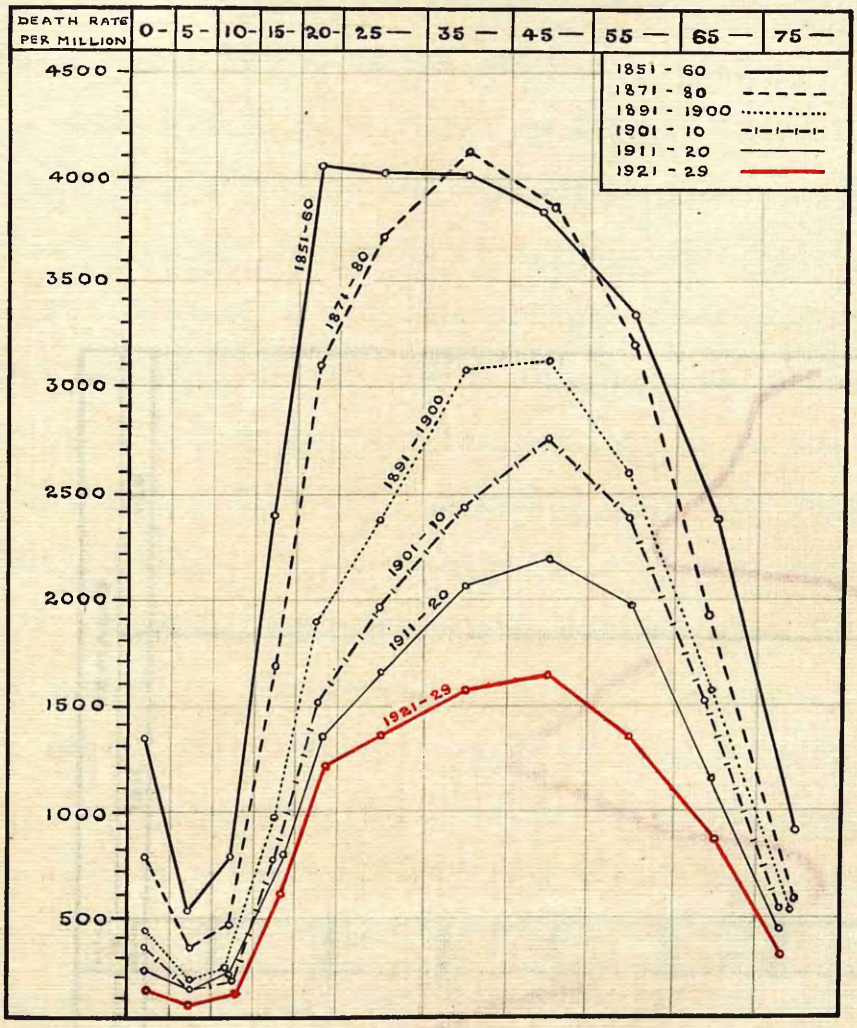
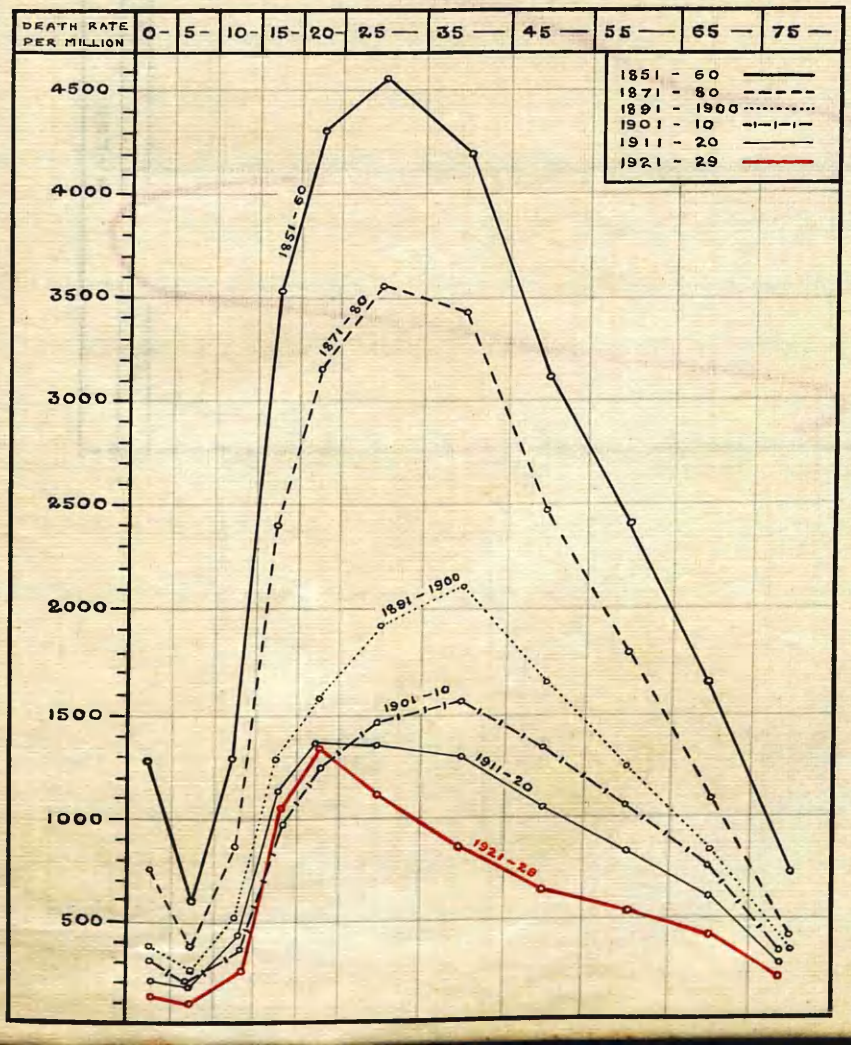
ENGLAND AND WALES. RESPIRATORY TUBERCULOSIS.

DEATH RATES PER MILLION AT DIFFERENT AGE-PERIODS FOR CERTAIN DECENNIA SINCE 1851.

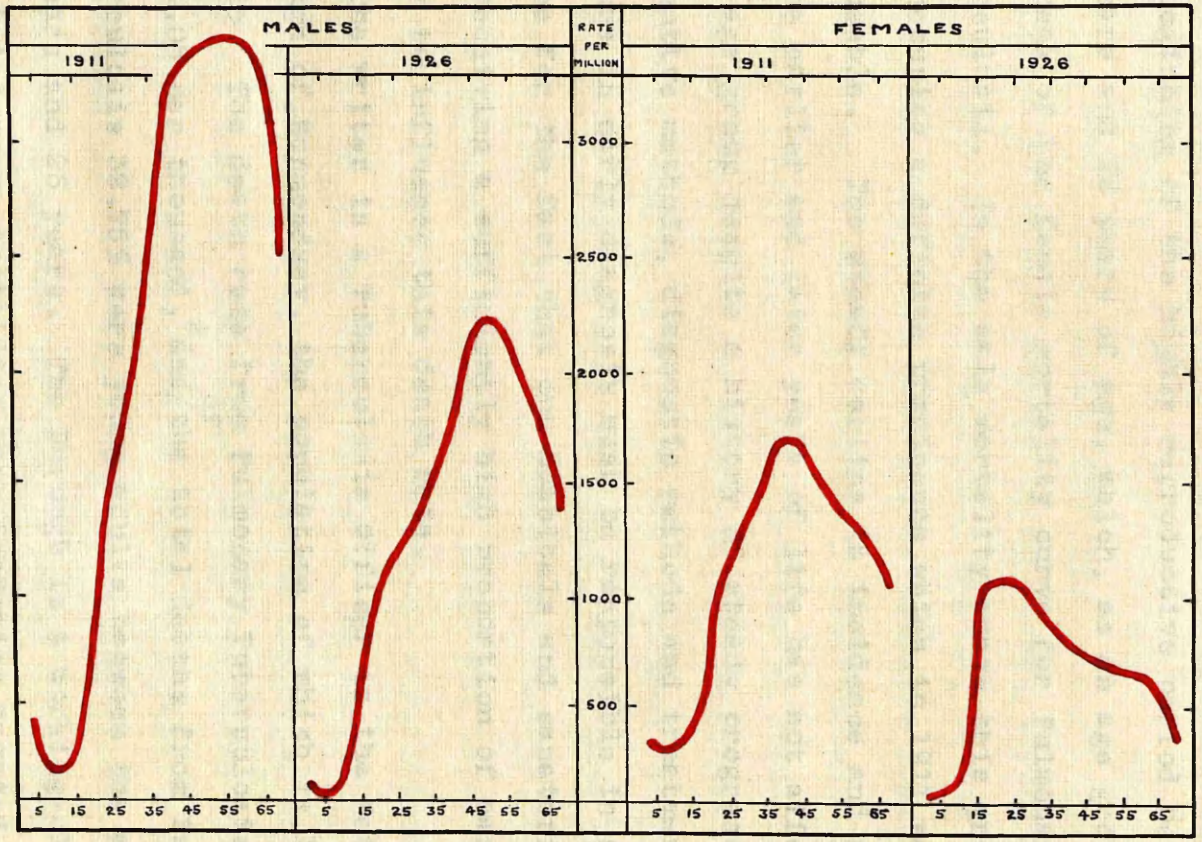
MALES. AGE-PERIODS.



FEMALES. AGE-PERIODS.



Mortality in Respiratory Tuberculosis in London



I. Introduction.

The aim and purpose of the present work is to expound diagnostic methods and channels in a type of Pulmonary Tuberculosis which is not often discussed.

Adolescence is a crisis in life. "There is a change "morphologically" in the anatomical personality; "functionally" in the physiological personality, and most of all perhaps in the "psychological personality" [1]. It is the beginning of the highly reproductive period between 15 years and 25 years of age, which, as an age group, forms the peak of the female mortality curve for Pulmonary Tuberculosis. In the male mortality curve this group now occupies a definite prominence which in 1911 was hardly noticeable. The steady decline in incidence and mortality in the earlier and later years of life has not affected this age group despite a history of steady progress in preventive methods, diagnostic methods and treatment. Failure in early diagnosis must be responsible in some degree for the fact that our hospitals and sanatoria are not receiving a sufficiently high proportion of early cases to influence this death rate.

The writer is a Tuberculosis Officer in the Metropolitan Borough of Bermondsey, the population of which is 111,526 people. The death rate from Pulmonary Tuberculosis in 1931 was 1.03 per thousand, [2] and/the total deaths from Pulmonary Tuberculosis 32.75% were young adults between the ages of 15 years and 25 years. The Borough is a working-class industrial area, containing many factories engaged chiefly in food production, and employing a high percentage of young adult labour. The dock areas are extensive, and the work there demands youth and strength.

II. Historical. (a). THE FOUNDATION OF DIAGNOSIS.

Hippocrates (460 - 377 B.C.) laid the foundations of all diagnosis by directing us to make the fullest use of our senses, and to estimate carefully the value of symptoms.

Auenbrugger (A.D. 1722 - 1809) and Corvisart (1755 - 1821) revived percussion for our elaboration. Laenec (1781 - 1826) made the modern stethoscope possible by his discovery of mediate auscultation. William Stark (A.D. 1722 - 1809) disclosed the presence of Tubercles in the lung, and laid the foundations of the pathology of the disease. In 1882 Koch announced his discovery of the Tubercle Bacillus, and confirmed the conclusions of William Budd (1862) on the zymotic nature of Tuberculosis.

(b). Etiological Theories.

The etiology of the disease being known, theories as to the mode of infection were built up. Whitla, in his Cavendish lecture (1908), championed the view of Calmette that "the immense majority of cases of Pulmonary Tuberculosis is not contracted by inhalation, but by ingestion of bacilli or bacilliferous products which penetrate the intestinal mucosa". He and Symmers from their experiments concluded "that carbon particles, china ink and Bacillus Tuberculosis pass through the lymphatic glands of the mesentary, and finally, either enclosed in phagocytes or free, find their way into the thoracic duct to be poured into the venous circulation before becoming arrested in the capillaries of the lung."

Wingfield[3] adheres to the endogenous theory of infection and considers that, in most cases, adult Pulmonary Tuberculosis is blood born from a pre-existing focus of infantile infection. The endogenous theory of infection has become firmly established, and has tended to obscure the importance of exogenous infection and exogenous superinfection.

(c). The Influence of Pathology.

Correlation of clinical signs and pathological processes became a fetish with earlier investigators, and any opinion which would not stand the light of the post mortem room was discarded. Apical scars were found in the lungs of people who did not die of Tuberculosis, and the apex of the lung was transferred through generations of text-books as the site of

onset. This is evident in a standard classification of today (Turban Gerhardt). Stage 1 is given as "early disease of slight severity affecting the apex of one lobe, or if both lobes are affected, not extending below the clavicle or the spine of the scapula.". Fowler[4] states that "the apex of the lung is the primary site of the disease in the large majority of cases. The extreme apex of the lung is not often the site of the primary lesion. It is usually situated an inch to an inch and a half below the summit of the lung. The primary focus corresponds either to the supraclavicular fossa or to a spot immediately below the centre of the clavicle." He proceeds to say that "the middle lobe of the right lung is rarely the site of a primary Tuberculous lesion. It is almost invariably affected after the upper lobe of the same side, and usually at rather a late period of the disease."[5] He adds that primary infiltration of the lower lobe "is very rare except in cases of crossed lesions" and that "it is very rare to meet with a case, either during life or on the post mortem table in which this area of the lung is affected while the apex of the lung remains free from disease."[6] Thompson and Ford[7] quote this teaching, and it has formed the basis of much modern diagnosis. The pneumonic and broncho-pneumonic processes were considered to be primarily multiple infiltrations, until radiology revealed the single localised early infiltration.

(d). Epidemiological Facts.

Brownlee, in his valuable monograph, "Investigation into the Epidemiology of Phthisis in Great Britain and Ireland," (Special Report series, No. 18, of Medical Research Council, pointed out the existence of a distinct type of disease affecting young adults, the commonest age at death being between 20 and 25 years of age. His mortality curves showed a distinct peak at this age group for rural communities, and the urban communities are today showing a similar phenomenon. The full value of these observations has not been appreciated by clinicians.

(e). Diagnostic Diffidence.

Conservative diagnosis has persisted. Fowler[8] states that "the facts that diffuse Broncho-pneumonia may give rise to signs indistinguishable from those of disseminated caseous Tuberculosis suggests cuation in giving an unfavourable prognosis. When there are unmistakable signs that the lung is breaking down and Tubercle Bacilli are present in the sputum, the real nature of the case becomes clear." In discussing the possible confusion of the lobar form of Tuberculosis with Pneumonia he says "the error is not only pardonable, but may be necessary, and provided that the true nature of the disease is recognised as soon as the evidence is clear, no harm is done."

(f). The Lead of Prognosis.

The prognostic importance of early diagnosis has all along been emphasised. Trudeau[9] concluded from the study of a thousand cases that (1) cases in which no rales were found showed the highest percentage of cures. (2). Patients admitted with rales, but who lost them during their stay in Sanatorium, formed nearly as favourable a group. (3). In patients admitted without rales who developed them later, the prognosis was much more grave. Fowler's[10] Analysis of 1,364 cases, two to six years after discharge from Sanatorium, showed that the chance of a Stage 1 case living for two years was four times greater than that of a Stage II case. The mortality was five times greater in cases that came under treatment after Tubercle Bacilli had been found in the sputum, than in cases treated before they were found.

(g). The Classical Description.

Attention has not been effectively directed to the problem of the young adult. Fowler refers to the lobar form of disease as being rare but "more common in the young adult." Thompson and Ford[11] classify the type of disease in young adults as sub-acute. Their description is as follows:- "The disease usually commences at the apex and spreads downwards. The onset is usually insidious with rise in temperature rarely exceeding 101°F. and rapid pulse,

the rapidity of which is usually out of proportion to the temperature. There are slight cough and expectoration, with huskiness and weakness of the voice, wasting, anaemia and muscular tremor. The sputum almost invariably shows the presence of T.B. at an early stage. The physical signs are chiefly feeble breath sounds with subsequent harsh respiratory murmur, and fine or medium crepitations. Myoidema is usually marked. The disease is more frequently seen in young girls, and is uaually fatal within twelve months."

III. Specific Details.

(i). Clinical Description.

The type of case with which I am concerned corresponds to that first described by Rist, and later by Assam[12] in his treatise "An isolated Tuberculous lesion at the clinical beginning of the disease." Morlock[13] has described the patient as showing "the first manifestation of Pulmonary Tuberculosis."

A high proportion of cases give a history of contact with an infectious case. The history is short, usually weeks or even days instead of months, and sometimes no symptoms are admitted by the patient, but are revealed by relatives. The symptoms at onset may be significant, but are often indefinite and may be very slight. The acute cases are, as a rule, diagnosed as suffering from "Influenza". Lydtin,[14] Fassbender[15] and Bruaening[16] emphasised the prevalence of misdiagnosis of "Die Grippe" in cases which they reported. Languor, cough, pain and fever are the most significant symptoms.

The patient is almost invariably a healthy looking individual, aged between 15 and 25 years, with no previous history of serious illness, excepting the exanthemata of infancy.

Frequently physical signs cannot be detected; more frequently they are indefinite, and when definite they

usually indicate progression beyond the initial phase.

There may be no sputum present, but, if present, Tubercle Bacilli are found in a high proportion of cases.

The skiagram shows a small unilateral area of infiltration varying from the size of a shilling to that of a crown when circular, but often tending to fan shape in the middle zone. In situation it is most frequently subclavicular, but it may be in the middle zone, and the lower zone is a more common site than is generally believed.

(ii). Pathological Processes.

There is only one recorded case[17] of a young adult with early infiltration reaching the post mortem room.

"Clinically and radiologically it was the case of an infraclavicular Frühinfiltrat in Assman's sense in a state of advance, but without breaking down. Pathological-anatomically and histologically the change corresponds to caseous acinous nodular tuberculous foci in the middle and lower thirds of the right upper lobe, with free upper third of the lobe. Between and around the specific changes there are abundant unspecific inflammatory changes, indistinctly separated from the specific tuberculous foci and corresponding to perifocal inflammation. The possibility of a primary focus or an exacerbation of a primary complex could be excluded by the demonstration of the anatomically healed primary focus. The question of origin could only be narrowed down, but had to be left open. In the same way no conclusion could be arrived at on the aetiology of the perifocal inflammation."

The early lesion is pneumonic or Broncho-pneumonic. It has been correlated to the congestive or simple inflammatory changes which are present in the neighbourhood of chronic and fibro-caseous foci. These changes were formerly considered to be non-tubercular, but today they are known to be the precursors of the chronic lesions, and, therefore, tubercular. The pneumonic nature of these lesions

was first described by two English pathologists, Wilson Fox and Green in 1873 - 74. Thaon (1885) proved that they were Tubercular by finding Tubercle Bacilli in the Bronchi and Acini. Jaquerod[18] states that "in this pneumonic stage of the lesions the bacilli are not yet solidly implanted in the tissues. They have not yet taken root as in the long standing lesions or in the miliary type. They remain on the surface of the mucous membrane between the epithelial cells in the alveoli and in the intercellular spaces; thus their destruction and elimination by the phagocytes or other means of defence is rendered much easier. It is only when the lesions do not heal that the newly formed tissues which profoundly alter the normal condition of the organ are produced." The views of Ranke[19] on the three stages of the development of Tuberculosis of the Lungs from the primary complex through the secondary stage of generalisation with haemotogenous and lymphogenous dissemination, to a tertiary stage of well defined old standing infection, do not explain the type of acute focal infiltration found in the young adult. Redecker[20] defines this lesion as a Tuberculous Superinfection, its central focus consisting of a new settlement of Tubercle Bacilli in the bronchus of a person already infected. The Pulmonary reaction is that of an allergic individual, and in no ways resembles the ganglio-pulmonic reaction of childhood. Cavity formation may occur, but the cavity is quite different from that seen in Chronic Pulmonary Tuberculosis. It has no pyogenic membrane, but is lined with simple inflammatory tissue. Jaquerod describes this lesion as corresponding to the "Frühinfiltrat" or infraclavicular infiltration of the German observers, but he emphasises that it may develop in any part of the lung. Morlock considers that the true pathology of the lesion is as yet a matter for speculation, but that it may correspond to the gelatinous pneumonia of Laennec[21] or the collateral inflammation of Tendeloos.[22]

(iii). Etiological Factors.

Since the time of Koch opinions have differed as to the factors concerned in the production of adult Pulmonary Tuberculosis. The conclusions of Ranke on the three stage development of the lesion from the primary complex, led to wide acceptance of the "blood borne" theory. This opinion was strengthened by the relative frequency of right upper lobe infections. In my series of cases 40% have right upper lobe lesions. The works of Assman, Lydtin and Redecker produced evidence that the primary lesion in young adults was pneumonic or Broncho pneumonic in character, and that in part it signified the allergic response of the individual to Tuberculo protein. From this it was assumed that a previous infection by T.B. had occurred most probably in childhood. The Tuberculin tests[23] have informed us that approximately 75.5% T.B.+ contacts, 36.8% T.B. — contacts and 35.6% non contacts under 10 years of age are already infected. MacPhedran[24] asserts that a primary lesion in the child can be discerned roentgenographically; that it is situated in the extreme apex, and that the sub-apical lesion in the adolescent is due to descent of the apical lesion. This theory lacks support from other observers, and has recently been refuted by Lloyd.

The place of Tuberculin negative children and adolescents is as yet obscure. Heimbeck,[25] Geer,[26] and Scheel[27] believe that preventive measures, together with the general decline in mortality from Tuberculosis, have lowered the incidence of infection among children, and that infection is postponed till the individual goes to work. "The endeavour to avoid Tuberculosis in childhood has resulted in the transference of a high morbidity and mortality to young adult life." They present statistics in favour of the Tuberculin negative reactors forming a high proportion of the young adult cases of Pulmonary Tuberculosis.

The pathology of the lesion warrants an assumption of a previous primary infection in the majority of my cases, and the

high proportion of contacts leads me to the belief that Exogenous Superinfection is the chief cause of Adolescent Phthisis.

Poor social and economic conditions may be contributory factors in infection. Overcrowding, underfeeding, lack of oxygen and light deficiency all lower resistance. The irresponsibility of youth, intemperate habits and emotional stresses reduce vitality.

My cases, however, did not come from the worst housed or poorest section of the community. Their general nutrition was good. The most striking feature was that 54% came from homes where infection already existed.

(iv). Progress of the lesion.

Cases are reported where the lesion has resolved spontaneously. Redecker, Lydtin, Kayer Petersen[28] and Morlock have reported such cases. Such a happy ending appears to be uncommon. A number of my cases have remained stationary and apparently quiescent after Sanatorium treatment, proving that shutting in of the early lesion does occur.

The most striking feature in the majority of cases is the rapid spread. Very often within a matter of weeks in untreated cases we have a picture of Acute Bronch-pneumonic Phthisis. Redecker is of opinion that spread is by aspiration into the surrounding tissues. This is supported by the fact that spread in the other lung is by "daughter infiltration".

Routine sanatorium treatment is very uncertain in restraining progress of the lesion. Healing has to be complete, and apparent quiescence is no guarantee against a resumption of acute spread within a matter of weeks. The cases in which I have noted this acute reactivity during apparent quiescence are those which have returned from Sanatorium to close contact once again, and it may

be that their allergic response has been increased instead of diminished by the partial healing of their lesions.

(v) Diagnostic Criteria.

Since the revelation of young adult Pulmonary Tuberculosis as a clinical entity, only sketches references have been made to the possibility of diagnosis by clinical and physical examination. Most of the cases discussed have emanated from hospitals and dispensaries where X-Ray facilities were easily available. I should like to consider these cases in the light of the consulting room, and consider whether they are amenable to diagnosis by ordinary routine examination.

The cases may be divided into (1) - Those with slight symptoms. (2) - Those with dramatic symptoms, e.g., Haemoptysis. (3) - Those suffering from Influenza or with a recent history of "Influenza" in inter-epidemic periods.

Only weeks or even days may be available to make a diagnosis before the prognosis becomes hopeless.

Family history reveals contact, past or recent. It raises the question of social and economic conditions. The patient living in contact with an open case should become an immediate suspect. Trivial symptoms are enhanced and full investigation is indicated.

Past History is, as a rule, negative. Between infancy and adolescence I have noted a period of very good health in most of my cases. There is no indication of malnutrition in childhood or of any of the so-called "pre-tubercular" manifestations. A history of "Influenza or Pleurisy", within the past year is of importance, but, in my cases, such incidents were recent.

Personal History introduces the question of contact outside the home. This is only a little less important than contact within the home. The stresses of life in general

can be assessed. A great many of my patients worked long hours and played vigorously, reducing their rest periods below the minimum.

Present History is often indefinite, and has to be accurately dated. Shyness, fear and indifference have to be overcome in the young adult. If languor occurs in an apparently healthy individual it is of importance, but very often one has to appeal to relatives for information on this point. Recent "Influenza" is highly significant. As a rule a history of chest symptoms during the attack is given. But there is a period of apparent quiescence immediately after the attack, and symptoms may disappear completely, to return later as the disease progresses. This quiescent period is misleading.

General Condition: The aspect and general physique are normal in most cases. The patients are, as a rule, healthy looking young adults.

Symptoms: These are the basis of diagnosis. Languor, cough, sputum, pain, haemoptysis, temperature and pulse are all significant, and, when grouped, become almost diagnostic.

Physical Signs: Inspection, Palpation and Percussion frequently give very indefinite results. The respiratory excursion is not diminished at first. Alteration in the percussion note seldom can be detected, even when the site and extent of the lesion is known. In the absence of adventitious sounds there is no notable alteration in the respiratory murmur, except a slight prolongation of expiration over the lesion. The first adventitious sounds are fine crepitations suggestive of the "crepitis redux" of resolving pneumonia. These may disappear on coughing and fail to re-appear. In a very short time, frequently a matter of days, true post-tussic crepitations with an articulate character are present. They are diagnostic, indicate activity and

demand rapid action. The areas which require special attention in examination are, in order of importance :-

(1). In front.

(a). The infraclavicular area.
(b). Between the 3rd and 4th ribs in the anterior axillary line.
(c). The supraclavicular area.

(2). The axilla from the summit downwards.

(3). The back.

(a). Opposite the root of the spine of the scapula and down the vertebral border of the scapula.
(b). The supraspinous area.
(c). The basal area immediately below the tip of the scapula.

The necessity for mouth breathing during examination is stressed by some writers, but I consider that the method of breathing should be determined after examination of lungs for air entry. If the nasal passages are free from obstruction and air entry is good, breathing is quieter and finer changes can be interpreted much more easily than with mouth breathing. If the nasal passages are obstructed and the phases of the respiratory murmur cannot be interpreted clearly the patient should be instructed to breathe through the mouth. I have not noted the presence of cog-wheel breathing in any of the early cases which I have examined, and in a few suspicious cases in which it was present X-Ray findings were entirely negative. Roughening of the breath sounds, and the so-called "granular" breathing, have been notable by their absence. Prolongation of expiration has been most consistently present, and may be attributed to a superimposed local compensatory emphysema. In summing up the physical signs, one has to conclude that, in an early lung lesion, these are absent or indefinite, and that only after careful research into symptomatology can the diagnosis of Pulmonary Tuberculosis be put forward with any assurance.

Sputum Examination. A small amount of sputum is a common early symptom. In nearly every case in which it is present Tubercle Bacilli can be found. Diagnosis can thus be completed quickly in the majority of early cases of young adult Pulmonary Tuberculosis if sputum examination is done at once. It is not generally recognised that Tubercle Bacilli become evident in the sputum so quickly, and examination is too often delayed.

Radiology. Radiology has made rapid progress within the past ten years. It is now possible to define with accuracy a small area of Tuberculous infiltration of the lungs. For young adults this advance is of the greatest importance. It secures treatment at a stage when a definite assurance of cure can be given. To prove effective it must be supported by clinical diagnosis based on symptoms. The cases shown are illustrative of how symptomatology and radiology can be correlated, and help to reduce the high mortality of young adults from Pulmonary Tuberculosis.

IV. The Full Range of the Symptoms:

Languor. The gradual transition of a person from healthy vigour to apathy and weakness is typical of so many diseases that one cannot presume that Tuberculosis is the chief cause of languor. In a contact of an open case of Pulmonary Tuberculosis one should presume that the cause is likely to be Tuberculosis until observation and investigation has proved the contrary. In the cases which I record I have noted that the languor is more or less precipitate in its onset. Within a matter of days or weeks the patient finds that his desire to exert himself has vanished, and, in the words of his parents, he "sits about" more than usual. Once languor has become as established symptom X-Ray examination will usually reveal an extensive lesion, although physical signs may yet be few. The languor

of severe anaemia in young girls is gradual in its onset, less severe in intensity, and is, as a rule, corrected to a tolerable degree by medical treatment. The cases of early Tuberculous infiltration in young anaemic girls showed a well-defined increase in lassitude a few weeks before diagnosis.

Cough and Sputum. It is comparatively easy to elicit a history of cough, but its true significance lies in its capacity to produce sputum for examination. Frequently, with a history of cough, sputum is denied. In the early stages cough does not produce any desire to expectorate, and the amount expelled through the bronchi and trachea does not constitute a subjective symptom. If cough is definite, the presence of sputum should be presumed, and a sputum pot given to the patient. I do not refer to cases of cough where obvious Bronchitis is present. In my series of cases I have not noted one who suffered from Chronic Bronchitis, or who had signs which could be interpreted as simple apical catarrh. There is no evidence of the association of general Bronchitis with early infiltration, and general emphysema has not complicated any of the cases. Frequently sputum is admitted after denial, and, most frequently, it is present immediately on awaking in the morning. It would seem that the presence of sputum is thus actually forgotten. Cough is not regarded as of much significance by the average healthy household, but, as a rule, in the Tuberculous household, its true significance is realised.

Pain. Of all the symptoms pain is the most valuable in localising a possible lesion. In young adults it is the exception to find pain due to simple myalgia or intercostal neuralgia. In the absence of definite Rheumatism elsewhere

Pluerisy should be presumed, and X-Ray examination completed. Combined with one other significant symptom, and a history of contact, a diagnosis of Pulmonary Tuberculosis is almost assured. In case No. 1 and case No. 25 this is well illustrated.

In non-contacts also, localised pain in the chest should demand the absolute exclusion of Pulmonary Tuberculosis. The frequency with which cases of apparently simple pleurisy are, within a year or less, found to have gross Pulmonary Tuberculosis, suggests that the clinical care of such cases should not end with the termination of the primary attack of pain. In young adults this is peculiarly important owing to the rapid spread of the disease.

It should be taught that the symptom of pain is of more value than physical signs. I have in mind Case No. 8, in which a history of pain in the right axilla of a few days duration, was followed three weeks later by slight Haemoptysis. No physical signs were present on the right side. This was confirmed by re-examination, and by consultation with two colleagues, but a few catarrhal crepitations were present below the left clavicle. X-Ray examination revealed a wedge-shaped infiltration in the right mid zone.

Haemoptysis. This, the most dramatic symptom, brings more patients under immediate investigation than any other. It may be an early symptom, and, with even a small area of infiltration, breaking down occurs rapidly. Much has been written of the accurate differentiation of arterial and venous haemorrhage, but when the patient enters the consulting room, we have, as a rule, to elicit a history, and cannot see the blood. Differential diagnosis is important. Following upon haemoptysis, numerous patients have, in the past, been condemned unjustly to sanatorium treatment, and it has even been suggested that some patients have subsequently been infected in Sanatorium. In the young adult the problems of differential diagnosis are less involved. Emphysema is usually absent. Cardiac lesions

can be excluded clinically and radiologically. Neoplasms are uncommon. As a rule the diagnosis lies between dry haemorrhagic Bronchiectasis and Pulmonary Tuberculosis. Bronchiectasis may be apical but is frequently basal; may not give physical signs and sputum may be absent. Symptomatology may help, but diagnosis can only be established by X-Ray examination and lipiodol investigation. Haemoptysis in a young adult should be regarded as possibly due to Pulmonary Tuberculosis, but it should be accepted as a symptom demanding complete investigation before notification or sanatorium treatment.

Dyspnoea. "Shortness of breath" is seldom noted until toxaemia has become established. It is most frequently met with in the "post-influenzal" group of patients who have just passed through an acute febrile illness. Such patients give a definite history of dyspnoea, diminishing gradually in intensity. In most of the early cases dyspnoea is not complained of. While toxaemia may be present, it is slight, and it is only evident clinically in the evening.

Emphysema or Asthma have not been noted in any of my cases.

Temperature and Pulse. As indices of metabolic disturbance, temperature and pulse rate stand supreme. Both can be accurately recorded. A rise in temperature is significant even without other symptoms. A young adult patient showing rise in temperature cannot be dismissed without thought. Pulse rate is even more sensitive, and, in early Tuberculous infiltration, disturbance of the temperature pulse ratio is probably the first manifestation of the disease. Where X-Ray examination cannot be immediately completed, a careful record of the pulse temperature record over a few days will often prove helpful, and abnormalities in temperature or pulse associated with one or more significant chest symptoms, give strong

presumptive evidence of Pulmonary Tuberculosis in a young adult. (See Case No. 8).

The febrile illness called "Influenza", which so often brings medical attention to the Tuberculous patient without helping his condition, would seldom fail to indicate further investigation if the association of the symptoms was recognised.

Weight and Height. A history of loss of flesh is always significant, but is uncommon in early cases. By the time loss of flesh has become evident in a young adult, the disease has usually progressed to the limits of safety. Height and weight ratio is useful in assessing the nutrition of a patient, and weight records are of great value. Where time is limited, one cannot wait for a decline in weight. In a healthy looking young adult of good weight no bias towards negative diagnosis is justified on account of nutrition.

Night Sweats. These are of significance in the initial febrile state, and, later, occur in the toxaemic stage. In one early case (No.7) night sweats were very definitely an early symptom. A liability to sweat easily at all times on exertion was also noted, and suggests hypersensitivity of the sympathetic symptom. In most of the cases the skin tended to be dry rather than moist, and I consider this dryness to be of significance. Night sweats have to be considered in the light of the patient's habits and home conditions.

Appetite. Loss of appetite is so common in cases of malnutrition and anaemia that it is not accepted as significant. In a healthy young adult anorexia suggests toxaemia, and should lead primarily to an inquiry into the functioning of the digestive system. Digestive

disturbances have been absent in my series of cases.

Other symptoms. Laryngeal symptoms have been absent in my cases. One girl complained of hiccough as the very first suggestive symptom, and it can reasonably be regarded as associated with her lung lesion.

V. Comparison with orthodox teaching.

Symptoms. Symptomatology has become standardised. It has been laid down broadly in relation to all Pulmonary Tuberculosis. No attempt is made to bring into relief the penalties of neglect of symptomatology in young adults. The classification of their type of disease as sub-acute gives an impression of safety which is not justified. The average picture of a typical case begins with a brief slurring over of symptoms, and a gruesome description of clinical signs, toxaemia and death. The student who visualises this picture finds justification for faith in his stethoscope. The cheerful picture of a diagnosis based on symptomatology is the only one fit for publication in these days of expert Artificial Pneumothorax treatment when 90% of the patients should have a chance of being saved.

Sputum. The idea that tubercle bacilli are not present in the sputum for a considerable time from onset has led to unnecessary delay in diagnosis. 50% of cases could be secured in a favourable condition if sputum was examined at once.

The acceptance of a history of "no sputum" is wrong, and some attempt to secure sputum should be made in every case exhibiting any symptoms. The belief that a series of negative sputum tests gives a negative diagnosis should be eradicated, although widely held in America and Britain. It does not apply to the young adult. The physical characters of the sputum do not matter so long as sputum

is obtained.

Stigmata. These are absent in early cases of Pulmonary Tuberculosis in young adults. Apparent toxaemia may exist, but the appearance of the patient does not help in localising the disease until an advanced stage is reached.

Physical Signs. Reliance on physical signs alone is unjustified. Sufficient emphasis is not laid on the fact that a lung lesion may be extensive before signs become defined. Inspection most frequently cannot detect any impairment of movement. Myotatic irritability is not an early sign. Palpation does not reveal any loss of movement. The diaphragm moves freely for many weeks. Tidal percussion is uncertain. Impairment of the percussion note occurs only over a well established lesion. Ascultation often gives nothing, sometimes misleads, but may help to confirm suspicion, and, in the absence of radiology, yields the first positive sign. If post tussic crepitations are present we have an acute advancing process to deal with without delay.

The site of the lesion is not apical, but subclavicular and more often infraclavicular. The middle zone of the lung is a common site. Basal lesions are more frequent than is believed. They are especially acute, and their apparent infrequency is due to the infrequency of diagnosis before the disease gives a widespread appearance, which is apt to give the impression of apical onset, unless carefully interpreted in the skiagram.

VI. Conclusions.

1. Between the ages of 15 and 25 years Pulmonary Tuberculosis is more often acute than sub-acute.

2. Young adult Pulmonary Tuberculosis results from direct inhalation of the Tubercle Bacillus.

3. In early cases the patient looks healthy and is free from stigmata. Females are more susceptible than males.

4. No history of serious past illness is found in most cases.

5. Symptoms are always present to arouse suspicion.

6. Physical signs are often absent or indefinite.

7. Tubercle Bacilli are present in the sputum at a very early stage in many cases.

8. The absence of Tubercle Bacilli from the sputum does not give a negative diagnosis.

9. In the majority of cases only a few days or weeks from onset are available for early diagnosis.

10. Early cases can be diagnosed by symptomatology and radiology.

11. The early lesion is most commonly situated in the infraclavicular region. Middle zone lesions are common, and lower zone lesions are not rare.

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CASE RECORDS

Nos. 1 to 26.

C L I N I C A L R E P O R T.

CASE No. 1.

W.L. Age 21. Male. Single. Schoolmaster.

First Attendance: 9.5.31.

Reason for Attendance: Referred by private doctor on account of occasional pain in right subclavicular region.

Family History: One sister suffered from glandular tuberculosis in childhood.

Past History: Good health.

Present History: Date of onset of first definite symptom 25.12.30. Mode of onset; languor.

Present State: Tall, slim, nutrition fairly good.

SYMPTOMS:-

Cough.....Yes
Sputum.....Slight
Haemoptysis.....No
Dyspnoea.....Slight
Pain.....Right subclavicular region
Sweats.....No.
Appetite.....Fair
Bowels.....Regular.
Vomiting.....No.
Height.....5ft10ins
Weight.....9st.8½lbs
Highest known weight..10st.4lbs. (June 1930)
Temperature.....97.6° F.
Pulse.....96.
Hoarseness.....No.
Other Symptoms....Nil.

SIGNS:-

Inspection...No abnormality discovered.
Palpation....No abnormality discovered.
Percussion...No abnormality discovered.
Auscultation.No abnormality discovered.

SPUTUM EXAMINATION:-
12.5.31. Three specimens negative.

X-RAY EXAMINATION :-
Heart and mediastinum normal.
Right Lung - opacity under centre of clavicle and between 1st and 2nd ribs suggests tuberculous infiltration.

Diagnosis:- Pulmonary Tuberculosis. Confirmed after observation in Hospital.

Type:- Broncho-pneumonic.

Site:- Right upper Zone.

Treatment:- Sanatorium.

Result:- Quiescence.

REMARKS:-

This case illustrates the importance of pain as a diagnostic and localising symptom. In the young adult patient, if the cause of pain cannot definitely be diagnosed, X-Ray examination should not be omitted. The apical localisation of pain makes it more significant as an indication of lung infiltration. The history of languor associated with pain was significant of Tuberculosis.

C L I N I C A L R E P O R T.

Case No. 2.

A.M. Age 21 years. Female, Single, Tea-packer.

First Attendance: 4.1.32.

Reason for attendance: Languor and family history of tuberculosis.

Family History: Sister died T.B. Peritonitis Age 4½ years.
Sister died T.B. Peritonitis Age 6½ years.
Sister died P.T.,T.B. + 12.6.30. Age 24 years.

Past History: No previous illness.

Present History: Date of onset of first definite symptom 21.12.31
Mode of onset - influenza.

Present State: Pale. Nutrition fair.

SYMPTOMS:

Cough.....No.
Sputum.....No.
Haemoptysis.....No.
Dyspnoea.....No.
Pain.....No.
Sweats.....No.
Appetite.....Fair.
Bowels.....Regular.
Height.....5ft4½ins
Weight.....7st10lbs
Highest known weight..7st11¾lbs (Dec.1931).
Temperature...98.2° F.
Pulse.....88.
Hoarseness.....No.
Other Symptoms.....Nil.

SIGNS:

Inspection..No abnormality discovered.
Palpation...No abnormality discovered.
Percussion..No abnormality discovered.
Auscultation.No abnormality discovered.

SPUTUM EXAMINATION:

19.1.32. T.B. — 3 specimens.

X-RAY EXAMINATION.

Heart and mediastinum normal.
Right lung - Early infiltration under first rib.
apex hazy. Remainder of lung clear.
Left lung. No obvious infiltration.

DIAGNOSIS: Pulmonary Tuberculosis.

Site: Right upper zone.
Type: Broncho-pneumonic.
Treatment: Sanatorium.
Result: Remains under treatment. Doing well.

REMARKS:-

The bad family history, the febrile illness labelled "Influenza", and the subsequent languor indicated complete investigation. In the absence of sputum, diagnosis depended on X-Ray examination. Compare this case with Case No. 26, where a longer period elapsed before diagnosis.

C L I N I C A L R E P O R T.

Case No. 3.

E. R. Female; Age 21 years; Married; Housewife.

First Attendance: 27.5.29.

Reason for Attendance: Debility since confinement (1st) in October 1928.

Family History: No history of Tuberculosis. Parents refuse examination.

Past History: Rheumatic Fever - Age 8 years.
Scarlet Fever - Age 10 years.
Good health until first confinement in October, 1928.

Present History: Date of onset of first definite symptom: March, 1929.
Mode of onset: Cough and loss of flesh.

Present State: Thin and pale.

SYMPTOMS.

Cough.....Not now.
Sputum.....No.
Haemoptysis.....No.
Dyspnoea.....Slight.
Pain.....No.
Sweats.....No.
Appetite.....Fair.
Bowels.....Constipated.
Vomiting.....No.
Height.....5ft2ins.
Weight.....7st6¾lbs.
Highest known Weight...8st8lbs.
Temperature.....98°F.
Pulse.....88.
Hoarseness.....No.
Other Symptoms.....Nil.

SIGNS.

Inspection: Nutrition and muscular tone below normal. Mild degree of anaemia present. Slight retraction of Right subclavicular region. Expansion slightly diminished at Right apex.

Palpation: Helps to confirm diminution of expansion at Right apex.

Percussion: Slight impairment of percussion note at right apex.

Auscultation: No definite signs of disease.

Heart:.....Mitral systolic murmur conducted into the axilla.

X-RAY EXAMINATION.

Heart and mediastinum normal. There is a definite area of mottling below and extending above the right clavicle.

DIAGNOSIS: Pulmonary Tuberculosis.
Site: Upper zone.
Type: Broncho-pneumonic.
Treatment: Sanatorium.
Progress: Sanatorium report on discharge 2.10.29 "Clinical signs: Nil definite. No evidence of Pulmonary Tuberculosis.
Confirmation: Sputum 11.11.30. T.B. +.

REMARKS:-

Diagnosis was based on history, symptoms and signs. Auscultation did not help in confirmation, and, in the absence of sputum, X-Ray examination was necessary. This case was the probable source of infection of Cases 6 and 7. The slowly progressive nature of the lesion may be due to the organic disease of the heart.

C L I N I C A L R E P O R T.

Case No. 4.

L. W. Age 25. Female. Shop Assistant. (Fruiterers).

First Attendance: 17.1.30.

Reason for Attendance: Referred by panel doctor on account of cough and spit, loss of weight and loss of appetite. She had Pleurisy of the Right side in January, 1930.

Family History: No history of Tuberculosis.

Past History: Good health since birth.

Present History: Date of onset of first definite symptom, December 1929.
Mode of onset: Cough and slight expectoration.

Present State: Colour and nutrition fair: no evidence of wasting: No deformity.

SYMPTOMS.

Cough.....Yes.
Sputum.....Slight.
Haemoptysis.....No.
Dyspnoea.....No.
Pain.....No.
Sweats.....No.
Appetite.....Fair.
Bowels.....Regular.
Vomiting.....No.
Height.....5ft3½ins
Weight.....7st.
Highest known Weight...8st3lbs
Temperature.....98.4.
Pulse.....88.
Hoarseness.....No.
Other Symptoms....Nil.

SIGNS.

Inspection: No abnormality discovered.
Palpation: No abnormality discovered.
Percussion: Slight impairment of percussion note Right subclavicular region and over clavicle.
Auscultation: No abnormality detected.

SPUTUM EXAMINATION: 20.1.30. T.B. +.

X-RAY EXAMINATION 21.1.30.

Diaphragm normal. Heart and mediastinum normal. Small area of infiltration in region of, and partly obscured by right clavicle, with evidence of early cavitation.
L. Lung....Clear.

Diagnosis: Pulmonary Tuberculosis.
Type: Pneumonic.
Site: Right clavicular region.
Treatment: Sanatorium treatment.

REMARKS: The history and symptomatology pointed to a diagnosis of Pulmonary Tuberculosis. Immediate Sanatorium treatment, with a view to the induction of Artificial Pneumothorax was applied for, but admission was not effected till 14th February 1930. By this time the disease had spread through all the zones of the right lung, and the apex of the left lower lobe was infiltrated.

This case is illustrative of how acute the spread may be, and the urgency for immediate diagnosis and treatment.

C L I N I C A L R E P O R T.

Case No. 5.

B.N. Age 16 years. Female, Single, Machinist.

First Attendance. 25.8.31.

Reason for Attendance: Contact examination.

Family History: Mother has P.T. T.B. +.

Past History: No illness. Good health since infancy.

Present History: Date of onset of first definite symptom 11.8.31.
Mode of Onset; Pain in Right axilla.

Present State: Nutrition good. Colour good.

SYMPTOMS.

Cough.....No.
Sputum.....No.
Haemoptysis.....No.
Dyspnoea.....No.
Pain...Slight Right Axilla.
Sweats.....No.
Appetite.....Good.
Bowels.....Regular.
Vomiting.....No.
Height.....5ft2ins.
Weight.....7st4½lbs
Temperature.....98°F.
Pulse.....100.

SIGNS.

Inspection: No abnormality discovered
Palpation: No abnormality discovered.
Percussion: No abnormality discovered.
Auscultation; Crepitations below Right Clavicle.

SPUTUM EXAMINATION.

14.12.31. T.B. +.

X-RAY EXAMINATION.

Heart and mediastinum normal.
25.8.31. Increased striation Right upper zone suggestive of Tuberculous infiltration.

DIAGNOSIS :- Pulmonary Tuberculosis, confirmed three months later by positive sputum.
Treatment...Artificial Pneumothorax.
Result.....Very good. Still under treatment.

REMARKS:-

This case clinically suggested Pulmonary Tuberculosis. In the absence of definite X-ray findings observation was continued. It illustrates the value of significant symptoms such as pain in the absence of definite radiological evidence.

C L I N I C A L R E P O R T.

Case No. 6.

E.L. Female; Age 20 years; Single; Clerk.

First Attendance: 19.2.31.

Reason for Attendance: Routine contact examination (Sister P.T.,T.B. +.

Family History: Sister of E.R. Case No. 3. T.B. +.

Past History: Perfect health.

Present History:

Date of onset of first definite symptom: 26th December, 1930.

Mode of Onset: Sharp pain in Right Axilla. The pain lasted for three weeks, and was not accompanied by constitutional disturbance. It was diagnosed by her panel doctor as Rheumatism. No physical signs were present in the lungs. The general health of the patient continued to be excellent, and between the onset of the pain and her examination at the dispensary she had gained 6 lbs in weight.

Present State: Stout, well-nourished girl, enjoying good health.

SYMPTOMS.

Cough.....No.
Sputum.....No.
Haemoptysis.....No.
Dyspnoea.....No.
Pain.....Not now
Sweats.....No.
Appetite.....Good.
Bowels.....Regular
Vomiting.....No
Height.....5ft5ins
Weight.....8st12½ozs
Highest known weight....8st5lbs
Temperature....97.4°F(P.M)
Pulse.....80.
Hoarseness.....No.
Other Symptoms.....No.

SIGNS.

Inspection: Nil.
Palpation: Nil.
Percussion: Nil.
Auscultation: ? Crepitations Right Axilla.

X-RAY EXAMINATION.

Heart and mediastinum normal.
R. Lung. There is a triangular area of mottling tapering from the axilla to the upper end of the root.
L. Lung. Clear.

DIAGNOSIS: Tuberculous infiltration.
Site: Middle Zone.
Type: Broncho-pneumonic.
Treatment: Artificial Pneumothorax.
Prognosis: Good.

CONCLUSIONS:

This is a case of early Tuberculous infiltration commencing in the Middle Zone of the right lung in an exceedingly healthy looking young adult. Presumption of infection was based on :-

(1) History of pain.
(2) Known contact.
(3) Suspicious physical signs.

C L I N I C A L R E P O R T.

Case No. 7.

W.L. Age 21 years, male, single. Printer.

First Attendance: 9 .4.31.

Reason for Attendance: Routine contact examination.

Family History: Brother of E.R. Case No. 3 (T.B. + and E.L. Case No. 6.

Past History: Measles in infancy. Good health since infancy.

Present History:

Date of onset of first definite symptom 13.2.31
Mode of onset: Languor and Sweats.

Present State: Athletic type. Colour and nutrition good.

SYMPTOMS.

Cough.....Yes.
Sputum.....Slight (A.M)
Haemoptysis.....No.
Dyspnoea.....No.
Pain....Slight, 3 weeks ago. Right side.
Sweats.....Yes, on exertion.
Appetite.....Good.
Bowels.....Regular.
Vomiting.....No.
Height.....5ft7ins.
Weight.....10st4lbs.
Highest weight.Unknown.
Temperature..99°F(P.M.)
Pulse.....94.
Hoarseness.....No.
Other Symptoms.....Nil.

SIGNS.

Inspection: No abnormality discovered.
Palpation: No abnormality discovered.
Percussion: No abnormality discovered.
Auscultation: Prolongation of expiration in the right Axillary Region, and between 3rd and 4th ribs in front.

SPUTUM EXAMINATION: T.B. + 9.4.31.

X-RAY EXAMINATION.

Heart and mediastinum normal.
Right Lung: a wedge-shaped area of recent mottling tapers in from the axilla towards the Right root.
Left Lung: Clear.

DIAGNOSIS: Pulmonary Tuberculosis.
Site: Right middle zone.
Type: Broncho-pneumonic.
Treatment: Artificial Pneumothorax.
Prognosis: Good.

REMARKS:-

The symptoms were only revealed after interview with patient's mother. Patient denied all symptoms. Diagnosis was based on the alteration of the breath sounds in the axilla. This healthy looking patient would not have aroused suspicion. The elevation of temperature and pulse in a known contact is very strongly in favour of Tuberculous infection.

CLINICAL REPORT.

Case No. 8.

C.R. Age 18 years, Female, Single. Waitress.

First Attendance: 23.3.32.

Reason for Attendance: Haemoptysis 22.3.32. She attended Out Patient Department of General Hospital and was told "Nothing wrong". Her mother sent her to the dispensary next day.

Family History: Mother has P.T., T.B. +. (Advanced disease) Sister has P.T., T.B. +. (Arrested after Artificial Pneumothorax treatment).

Past History: Good health since infancy.

Present History:
Date of onset of first definite symptom: February 1932.
Mode of onset: Severe protracted attack of hiccough.

Present State: Very good. Nutrition and colour above average.

SYMPTOMS.

Cough.....Slight.
Sputum.....Very slight
Haemoptysis.....clot 22.3.32.
Dyspnoea.....No.
Pain.....Right Axilla
Sweats.....No.
Appetite.....Poor.
Bowels.....Regular.
Weight.....8st2lbs
Highest known weight.8st5½lbs (13.6.31)
Height.....5ft3ins
Temperature.....97°F.
Pulse.....88.
Hoarseness.....No.
Other Symptoms....Nil.

SIGNS.

Inspection: No abnormality discovered.
Palpation: No abnormality discovered.
Percussion: No abnormality discovered.
Auscultation: A few catarrhal crepitations over left subclavicular region.

SPUTUM. 24.3.32. T.B. +.

X-RAY EXAMINATION.

Heart and mediastinum normal.
Left lung: clear.
Right Lung: Triangular area of diffuse infiltration from 2nd to 5th ribs with base at axilla and apex at Hilum

DIAGNOSIS: Pulmonary Tuberculosis.
Type: Broncho-pneumonic.
Site: Right middle zone.
Treatment: Artificial pneumothorax. Lung adherent over lesion and at base.

REMARKS:

Diagnosis was based on association of symptoms and family history which pointed to Pulmonary Tuberculosis. Localisation of the lesion by stethoscopic examination was uncertain. No physical signs could be detected in the right lung by me or by the hospital physician. Though crepitations were found by auscultation on the left side, the pain complained of on the right side coincided with site of the lesion. The importance of early sputum examination is emphasised.

C L I N I C A L R E P O R T.

Case No. 9.

D.G. Age 22 years, Female, Married. Shop Assistant.

First Attendance: 31.12.29.

Reason for Attendance: Contact examination.

Family History: Brother died of Pulmonary Tuberculosis (T.B. +) in September 1930.

Past History: No serious illnesses.

Present History:

Date of onset of first definite symptom 10.12.29.
Mode of onset: Slight cough.

Present State: Nutrition and colour good.

SYMPTOMS:	
Cough	Yes.
Sputum	Slight.
Haemoptysis	½oz. today
Dyspnoea	No.
Pain	Slight ache in Right axilla
Sweats	No.
Appetite	Good.
Bowels	Regular.
Vomiting	No.
Height	5ft5ins.
Weight	8st12lbs.
Highest known weight	9st11b. (1 year ago).
Temperature	98°F.
Pulse	84.
Hoarseness	No.
Other Symptoms	Nil.

SIGNS:

Inspection: No abnormality discovered.
Palpation: No abnormality discovered.
Percussion: No abnormality discovered.
Auscultation: Shower of post-tussic crepitations between 3rd and 4th ribs in Right anterior axillary line.

SPUTUM: 6.1.30. T.B. +.

X-RAY EXAMINATION.

Heart and mediastinum normal.
Right side of diaphragm lags.
Right Lung: Softening and excavation of upper and middle zones extending from clavicle to fifth rib.

DIAGNOSIS: Pulmonary Tuberculosis of right lung.
Site: Upper and middle zones.
Type: Pneumonic.
Treatment: Artificial Pneumothorax.

REMARKS:-

The striking feature of this case is the short time between the onset of symptoms and the finding of well-defined signs. Rapidly progressive disease is indicated. Immediate treatment by Artificial Pneumothorax has produced a splendid result. The combination of symptoms and signs rendered diagnosis easy and indicated extreme urgency.

CLINICAL REPORT.

Case No. 10.

F. C. Age 18 years, Male, Single. Machine hand.

First Attendance: 23.10.30.

Reason for Attendance: Referred by panel doctor on account of physical signs and sputum positive for T.B.

Family History: One sister has T.B. glands of neck.

Past History: Perfect health since infancy.

Present History:

Date of onset of first definite symptom: 19.9.30.

Mode of onset: Cough.

Present State: Colour and nutrition good.

SYMPTOMS.

Cough	Yes.
Sputum	Slight.
Haemoptysis (19.9.30).	Streak.
Dyspnoea	No.
Pain	No.
Sweats	No.
Appetite	Very good.
Bowels	Regular.
Vomiting	No.
Height	5ft7½ins.
Weight	9st4lbs.
Highest known weight	10st3lbs.
Temperature	98°F.
Pulse	88.
Other Symptoms	Nil.

SIGNS.

Inspection: No definite abnormality noted.

Palpation: Movement of Right lung impaired.

Percussion: Relative impairment over right upper lobes.

Auscultation: Pleural friction in right subclavicular region. Expiration prolonged and post tussic crepitations present.

SPUTUM: 6.10.30. T.B. +.

X-RAY EXAMINATION.

Heart and mediastinum normal.
Right Lung: Infiltration and excavation from 1st to 3rd rib.
Left Lung: Clear.

DIAGNOSIS : Pulmonary Tuberculosis.
Type: Pneumonic.
Site: Right upper lobe.
Treatment: Artificial Pneumothorax.

REMARKS:-

The interest of this case lies in the fact that the well-marked pleural friction sound tended to obscure the signs of underlying disease. These signs also altered the outlook with regard to treatment. Very good selective collapse was obtained with only a string adhesion proving that recent pleurisy should not rule out Artificial Pneumothorax treatment before an attempt at induction has been made. The breaking of the adhesion was almost certainly the cause of the effusion, but the result justifies the treatment, as the patient is well and doing casual heavy work as a dock labourer. The mode of onset with cough and haemoptysis should have compelled immediate investigation.

C L I N I C A L R E P O R T.

Case No. 11.

A. S. Age 17 years, Female, Single. Jam Factory worker.

Date of First Attendance: 2.6.32.

Reason for Attendance: Sent for ultra-violet light treatment for unresolved pneumonia.

Family History: No history of Tuberculosis.

Past History: Good health till November, 1931.

Present History: Date of onset of first definite symptom: November, 1931.
Mode of onset; Cough. Pain R. side of abdomen. Admitted to hospital for Appendicitis on 16.3.32. No operation was performed. Diagnosis was altered to lobar pneumonia of right side. X-Ray examination in hospital on 29.3.32 was interpreted as unresolved pneumonia. Sputum was negative for Tubercle Bacilli, and the temperature and pulse settled to normal. The patient was discharged cured on 20.4.32. The persistence of cough and sputum, and the failure to make progress, worried her private doctor.

SYMPTOMS.

Cough.....Yes.
Sputum.....Moderate
Haemoptysis.....No.
Dyspnoea.....No.
Sweats.....No.
Appetite.....Poor.
Bowels.....Regular.
Height.....5ft2ins.
Weight.....6st5lbs.
Highest known weight..7st5lbs.
Temperature.....102.4.
Pulse.....120.
Other Symptoms....
Langúor.

SIGNS.

There are signs of excavation over the right subclavicular region, and of active disease over all zones of the right lung, and over the left upper lobe.

SPUTUM. 6.6.32. T.B. +.

X-RAY EXAMINATION.

(1). Hospital X-Ray plate 29.2.32.
Heart and mediastinum normal.
R. Lung: Infiltration from clavicle to 3rd rib. Excavation in region of 2nd rib. sharply defined. Mid and lower zones clear.
L. Lung: Clear.

(2).....7.6.32.
Heart and mediastinum normal.
R. Lung: Infiltration of all zones. Densest in upper zone where there is excavation. Upper interlobar septic defined.
L. Lung. Infiltration of all zones.

REMARKS:-

This case illustrates the tragic consequences of failure to diagnose a moderately early lesion. The differential diagnosis of the X-Ray picture lay between lung abscess and Pulmonary Tuberculosis. The definite mottled and stippled effect on the plate should have given definite confirmation of Tuberculosis. The mode of onset with acute pain over the appendix region is of interest. The rapidity of spread of the disease in four months demonstrates the short time available for effective treatment.

CLINICAL REPORT.

Case No. 12.

L.A. Age 16 years, Female, Single. Machinist (Underwear).

First Attendance: 6.12.30.

Reason for Attendance: Referred by Panel Doctor on account of cough.

Family History: No history of Tuberculosis.

Past History: Good health since birth.

Present History:

Date of onset of first definite symptom:
Mid. November 1930.
Mode of onset: Cough.

Present State: Nutrition and colour fairly good.

SYMPTOMS.

Cough.....Yes.
Sputum.....No.
Haemoptysis.....No.
Dyspnoea.....No.
Pain...Below left Clavicle
Sweats.....Yes.
Appetite.....Poor.
Bowels.....Regular.
Vomiting.....No.
Height.....5ft3ins.
Weight.....8st4lbs.
Highest known weight -.
Temperature.....101.4
Pulse.....120
Hoarseness.....No.
Other Symptoms....No.

SIGNS.

Inspection: Impaired movement.Right Side.
Palpation: " " " "
Percussion: Note impaired R. upper lobes.
Auscultation: Creps R. upper lobes front and back.

NO SPUTUM.

X-RAY EXAMINATION.

Right Lung. Infiltration of upper and middle zones with excavation below clavicle.
Left Lung: Clear.

DIAGNOSIS: Pulmonary Tuberculosis.
Type: Pneumonic.
Site: R. upper and middle zones.
Treatment: Artificial Pneumothorax.
Result: Uncomplicated. Remains under treatment.

REMARKS:

Pulmonary Tuberculosis was indicated by the symptoms, and confirmed by clinical examination. The short history and the extensive disease, indicate acute spread and urgency for treatment. The freedom of the left lung from disease is accounted for by the relative lack of breaking down. The combination of cough, elevation of the temperature and pulse, and the site of the pain were strong evidence in favour of Pulmonary Tuberculosis.

C L I N I C A L R E P O R T.

Case No. 13.

F.C. Female, Age 19 years, Single. Biscuit Packer.

First Attendance: 1.8.29.

Reason for Attendance: Referred by panel doctor on account of Haemoptysis.

Family History: Father died of Pulmonary Tuberculosis.
Mother died of Pulmonary Tuberculosis 21.7.26.

Past History: Influenza, Age 7 years. Anaemia since adolescence. Health in childhood good.

Present History:
Date of onset of first definite symptom: April 1929.
Mode of onset: Easily tired.

Present State: Nutrition fair. Pale.

SYMPTOMS.

Cough.....No.
Sputum.....No.
Haemoptysis...1 dram. 31.7.29.
Dyspnoea.....No.
Pain.....Slight. Left Axilla.
Sweats.....No.
Appetite.....Good.
Bowels.....Regular.
Vomiting.....No.
Height.....5ft4ins.
Weight.....7st4lbs.
Highest known weight.7st
Temperature..98,8° to 99° (P.M.)
Pulse.....92.
Hoarseness.....No.
Other Symptoms...Nil.

SIGNS.

Inspection: No abnormality discovered.
Palpation: No abnormality discovered.
Percussion: No abnormality discovered.
Auscultation: Occasional post tussic crepitations under left clavicle. Otherwise no abnormality discovered.

X-RAY EXAMINATION.

Heart and mediastinum normal.
There is an area of mottling below and under the junction of the inner and middle thirds of the left clavicle extending upwards towards the apex of the left lung.

SPUTUM EXAMINATION: No sputum

DIAGNOSIS: Tuberculous infiltration of the left upper lobe.
Type: Broncho pneumonic.
Treatment: Sanatorium.
Result: Quiescent.

REMARKS:-

The haemoptysis by itself, in the absence of clincial signs, might have been due to Dry Haemorrhagic Bronchiectasis. The combination with pain and a slight evening rise in temperature and pulse rate strongly suggested Tuberculosis. The post tussic crepitations were so occasional as only to add weight to the suspicions, but the X-Ray was confirmatory.

Haemoptysis in a young adult is usually associated with some pointing symptoms when due to Tuberculosis.

CLINICAL REPORT.

Case No. 14.

G.H. Age 19 years, Female, Single. Domestic servant.

First Attendance: 27.9.30.

Reason for Attendance: Employer required certificate that patient was free from infection.

Family History: Father suffers from Pulmonary Tuberculosis T.B.+ 2.

Past History: In infancy: Measles, whooping cough, scarlet fever, chicken-pox.

Present History: Date of onset of first definite symptom: July 1930.
Mode of onset: Easily tired.

Present State: Tall, pale, nutrition good, no evidence of wasting, no deformity.

SYMPTOMS.

Cough.....No.
Sputum.....No.
Haemoptysis.....No.
Dyspnoea.....No.
Pain.....No.
Sweats.....No.
Appetite.....Good.
Bowels.....Regular.
Vomiting.....No.
Height.....5ft10ins
Weight.....8st11lbs
Highest known weight.....Unknown
Temperature.....98.2°F.
Pulse.....84.
Hoarseness.....No.
Other Symptoms.....
Slight Languor

SIGNS.

Inspection: No abnormality discovered.
Palpation: No abnormality discovered.
Percussion: No abnormality discovered.
Auscultation: No abnormality discovered.

SPUTUM EXAMINATION: T.B. +. 6.1.32.

X-RAY EXAMINATION.

Heart and mediastinum normal.
Left Lung: There is a small area of infiltration with central excavation at the outer end of the 1st left interspace and just below left clavicle. The edges are hazy and suggest progressive disease.
Right Lung: Clear.
DIAGNOSIS: Tuberculous infiltration of the left lung.
Type: Broncho pneumonic.
Site: Upper zone below clavicle.
Treatment: Sanatorium 3.10.30 to 10.4.31.
Result: Quiescence followed by acute spread necessitating artificial pneumothorax treatment in January 1932.
Prognosis: Doubtful.

REMARKS:- This case might have been missed, but for known contact history. Languor was absolutely denied, and was revealed later on by mother. The patient had previously refused contact examination and her attitude at examination was defensive. This attitude leads to a blank history being given, and should, of itself be given the weight of a symptom.
Physical examination was negative in this case.

C L I N I C A L R E P O R T.

Case No. 15.

F.B. Age 23 years, Female, Single. Factory Hand.

Date of first Attendance: 17.12.31.

Reason for Attendance: Routine contact examination.

Family History: Mother has advanced disease P.T.T.B. +.

Past History: No illness since chicken pox in infancy.

Present History: Date of onset of first definite symptom 16.1.32.
Mode of onset: Slight pain in left subclavicular region.

Present State: Nutrition good. Colour good.

SYMPTOMS.

Cough.....No.
Sputum.....No.
Haemoptysis.....No.
Dyspnoea.....No.
Pain.....No.
Sweats.....No.
Appetite.....Good.
Bowels.....Regular.
Vomiting.....No.
Height.....5ft $4\frac{1}{2}$ins
Weight.....7st $11\frac{1}{2}$lbs. (17.12.31).
Highest known weight..8st $11\frac{1}{2}$lbs. (18.1.32).
Temperature..98.6°F.
Pulse.....88.
Hoarseness.....No.
Other symptoms.....No.

SIGNS.

Inspection: No abnormality discovered.
Palpation: No abnormality discovered.
Percussion: No abnormality discovered.
Auscultation: A few fine crepitations, which are removed by coughing, are present below the left clavicle.

X-RAY EXAMINATION.

Heart and mediastinum normal.
Left Lung: Early infiltration of upper zone from apex to second rib. Rest of lung clear.
Right Lung: Clear.

DIAGNOSIS: Pulmonary Tuberculosis.
Type: Broncho pneumonic.
Site: Left subclavicular region.
Treatment: Artificial pneumothorax.
Results: Good collapse. Remains under treatment.

REMARKS:

This patient had no symptoms when first examined, except a temperature of 98.6°F. A few crepitations resembling the crepitus redux of pneumonia were present below the left clavicle. X-ray examination confirmed the diagnosis of Pulmonary Tuberculosis. This case illustrates the necessity for careful physical examination, especially in young adult contacts of sputum positive cases. The weight increased, despite the progress of the lesion.

C L I N I C A L R E P O R T.

Case No. 16.

H. S. Age 16 years, Male, Single. Cigarette Machine Maker.

First Attendance: 21.12.31.

Reason for Attendance: Routine contact examination.

Family History: Brother, age 20 years, has extensive disease P.T. T.B. +.

Past History: Excellent health.

Present History:

Date of onset of first definite symptom 14.12.31.
Mode of onset: Languor one week ago.

Present State: Very good: Athletic: Muscular tone excellent. Colour pale.

SYMPTOMS.

Cough.....No.
Sputum.....No.
Haemoptysis.....No.
Dyspnoea.....No.
Pain.....No.
Sweats.....No.
Appetite.....Good.
Bowels.....Regular.
Vomiting.....No.
Height.....5ft5¼ins.
Weight.....9st9lbs.
Temperature..98°F(P.M).
Pulse.....72.
Other Symptoms..Languor

SIGNS.

Inspection: No abnormality discovered.
Palpation: No abnormality discovered.
Percussion: No abnormality discovered.
Auscultation: No abnormality discovered.

X-RAY EXAMINATION.

Heart and mediastinum normal.
Left Lung: Early Tuberculous infiltration under clavicle.
Right Lung: Clear.

DIAGNOSIS: Pulmonary Tuberculosis. (Confirmed after observation in hospital).

Treatment: Sanatorium.
Result: Quiescence.

REMARKS:-

A short history of languor was the only symptom present. Combined with the contact history it assumed significance. The diagnosis was confirmed by X-Ray examination. Physical examination was of no value in establishing the diagnosis.

CLINICAL REPORT.

Case No. 17.

W. H. Age 18 years, Male, Single. Fancy Leather Worker.

First Attendance: 18.8.30.

Reason for Attendance: Anxiety of mother for patient on account of slight spit.

Family History: Father died P.T. 1927. Brother died, Age 22 years, of P.T. on 10.3.30.

Past History: Perfect health.

Present History:

Date of onset of first definite symptom: 4/8/30.
Mode of onset: Slight spit.

The patient was working steadily and enjoying good health. On 1.8.30 he commenced his annual holiday of two weeks and on 4.8.30 he noticed a slight desire to spit.

EXAMINATION.

SYMPTOMS.

Cough.....No.
Sputum.....Very slight.
Haemoptysis.....No.
Dyspnoea.....No.
Pain.....No.
Sweats.....No.
Appetite.....Good.
Bowels.....Regular.
Vomiting.....No.
Height.....5ft6½ins.
Weight.....8st4lbs.
Highest known weight.....—
Temperature.....99.2°F.
Pulse.....100.
Hoarseness.....No.
Other Symptoms.....Nil.

SIGNS.

Inspection: No abnormality discovered.
Palpation: No abnormality discovered.
Percussion: No abnormality discovered.
Auscultation: No abnormality discovered.

SPUTUM EXAMINATION: Three specimens negative for Tubercle Bacilli.

X-RAY EXAMINATION.

Heart and mediastinum normal.
Left Lung: There is a circular ring of mottling, the size of a half crown, below the left clavicle in the left mid zone.
Right Lung: Clear.

DIAGNOSIS: Tuberculous infiltration.
Site: Mid zone.
Type: Broncho pneumonic.
Treatment: Artificial pneumothorax attempted. Abandoned on account of posterior adhesion. Sanatorium Treatment - 6 months.
Result: Quiescent and full work.

REMARKS:

Contact history, sputum, elevation of temperature and rise of pulse rate, led one to suspect active disease.

X-Ray examination was necessary for localisation of the infiltration. Elevated temperature or pulse rate are highly significant where a definite history of contact is obtained. Sputum was the first symptom to attract the attention of the patient, and his mother, who realised its importance, brought him for examination at once.

CLINICAL REPORT.

Case No. 18.

F. W. Age 21 years, Female, Single. Waitress.

First Attendance: 9.7.31.

Reason for Attendance: Contact.

Family History: Mother died of Pulmonary Tuberculosis.
Aunt living at same address has P.T. T.B. +.

Past History: Good health.

Present History:
Date of onset of first definite symptom June, 1931.
Mode of onset: Lassitude followed by cough.

Present State: Tin. Colour fair. No evidence of wasting.

SYMPTOMS.

Cough.....Yes.
Sputum.....No.
Haemoptysis.....No.
Dyspnoea.....No.
Pain.....No.
Sweats.....Yes.
Appetite.....Poor.
Bowels.....Regular.
Vomiting.....No.
Height.....5st4lbs.
Weight.....6st12lbs.
Highest known weight...Not known.
Temperature....99.4°F.
Pulse.....90.
Hoarseness.....Nil.
Other Symptoms....Nil.

SIGNS.

Inspection: No abnormality discovered.
Palpation: No abnormality discovered.
Percussion: No abnormality discovered.
Auscultation: One or two post tussic crepitations over left subclavicular region.

X-RAY EXAMINATION.

Heart and mediastinum normal.
Left Lung: Infiltration in clavicular region with cavity 1½ inches in diameter. Middle and lower zones clear.
Right Lung: Suspicion of early infiltration in 1st interspace.
DIAGNOSIS: Pulmonary Tuberculosis.
Site: Left upper lobe & ? right upper lobe.
Type: Pénumonic.
Treatment: Hospital. Rest in bed.
Report: 6.10.31. No physical signs Temperature and pulse normal. Weight 8st 11b.

REMARKS:

Symptoms pointed to the diagnosis. The indefinite physical signs strengthened suspicions. X-Ray examination established the diagnosis. Lassitude is of such common occurrence in an industrial area that too much weight cannot be given to it, but, when accompanied by other recognised symptoms, it assumes the greatest importance.

C L I N I C A L R E P O R T.

Case No. 19.

A. R. Age 17 years, Female, Single. Leather worker.

First Attendance: 24.6.30.

Reason for Attendance: Examined in hospital after admission for haemoptysis.

Family History: No history of tuberculosis.

Past History: No history of ill-health.

Present History:

Date of onset of first definite symptom. Early in June 1930.
Mode of onset: Loss of weight, night sweats and haemoptysis (half cupful on 22.6.30).

Present State: Nutrition fair. Colour pale.

SYMPTOMS.

Cough.....Yes.
Sputum.....No.
Haemoptysis....Not now.
Dyspnoea.....Yes.
Pain.....Left axilla.
Sweats.....Yes.
Appetite.....Fair.
Bowels.....Regular.
Vomiting.....No.
Height.....In bed.
Weight.....In bed.
Temperature.....99° F.
Pulse.....90.
Hoarseness.....No.
Other Symptoms.....No.

SIGNS.

Inspection: No abnormality discovered.
Palpation: No abnormality discovered.
Percussion: Tympanitic note over left lung in front and in left axilla.
Auscultation: Very weak breath sounds over left lung in front and in left axilla.

X-RAY EXAMINATION.

Heart and mediastinum normal.
Left Lung: Early infiltration below left clavicle in first interspace from first to second rib.
Rest of lung clear.
Right Lung: Clear.
No evidence of spontaneous pneumothorax in antero-posterior view.

DIAGNOSIS: Pulmonary Tuberculosis.
Type: Pneumonic.
Result: Decline, foetid breath. No sputum.
Examination 29.7.30. Pneumonic consolidation of left upper lobe with impairment, tubular breathing and crepitations. Died 28.8.30.
Post-mortem Examination:
Left Lung. Caseating Necrotic mass in middle zone entirely broken down. Large cavity at apex.
Right Lung: Tuberculous Broncho Pneumonia in lower lobe; also very small focus in upper lobe.
Root glands enlarged.

REMARKS:

The interest of this case lies in the problem of differential diagnosis. The clinical course of the case suggested lung abscess. Where diagnosis is doubtful and the disease is advancing artificial pneumothorax should be done.

C L I N I C A L R E P O R T.

Case No. 20.

W. H. Age 22 years. Male, Single. Metal Worker.

First Attendance: 22.4.29.

Reason for Attendance: Referred by panel doctor on account of cough and spit (Sputum T.B. +).

Family History: No history of Tuberculosis.

Past History: Winter colds. No serious illness.

Present History:

Date of onset of first definite symptom: January, 1929.
Mode of onset: Cough.

Present State: Of average height and build; Pale; no apparent wasting; no deformity.

SYMPTOMS.

Cough.....Slight.
Sputum.....Slight.
Haemoptysis.....No.
Dyspnoea.....No.
Pain.....No.
Sweats.....No.
Appetite.....Good.
Bowels.....Regular.
Vomiting.....
Height.....5ft5ins.
Weight.....8st13¼lbs
Highest known weight.9st4lbs.
Temperature.....96.6°F.
Pulse.....124.
Hoarseness.....No.
Other Symptoms.....Nil.

SIGNS.

Inspection; Slight retraction of both apices.
Palpation: No abnormality discovered.
Percussion: Relative impairment Right subclavicular region.
Auscultation: No abnormality detected.

SPUTUM: 8.4.29. T.B. +.

X-RAY EXAMINATION.

Heart and mediastinum normal.
Left Lung: There is a small area of early mottling the size of a crown in the subclavicular region.

DIAGNOSIS: Pulmonary Tuberculosis of left lung.
Type: Broncho pneumonic.
Site: Subclavicular.
Treatment: Sanatorium.
Result: Quiescence.

REMARKS:

This is a case of Early Infiltration in a moderately healthy looking patient engaged in heavy work up to the time of examination, and shows that with minimal X-Ray findings, and no definite evidence of softening, T.B. may be present in the sputum. The physical signs were misleading, but the symptoms were strongly suggestive of Tuberculosis.

CLINICAL REPORT.

Case No. 21.

K. E. Age 19 years, Female, Married. Housewife.

First Attendance: 28.5.31.

Reason for Attendance: Diagnosed by panel doctor who found T.B. in sputum.

Family History: No history of Tuberculosis.

Past History: Measles and Bronchitis.

Present History: Date of onset of first definite symptom: December, 1930.
Mode of onset: Cough.

Present State: Nutrition and colour fairly good.

SYMPTOMS;

Cough.....Yes.
Sputum.....Slight.
Haemoptysis.....No.
Dyspnoea.....No.
Pain...Yes, Left Apex.
Sweats.....Yes.
Appetite.....Poor.
Bowels.....Regular.
Vomiting.....No.
Height.....5ft3¼ins.
Weight.....7st3¼lbs.
Highest known weight.....9st.
Temperature....98.6° F.
Pulse.....80.
Hoarseness.....No.
Other Symptoms.....No.

SIGNS.

Inspection: No abnormality discovered.
Palpation: No abnormality discovered.
Percussion: Slight impairment over left clavicle and below left clavicle.
Auscultation: Shower of post-tussic crepitations above left clavicle. No crepitations under clavicle.

SPUTUM EXAMINATION: 18.5.31. T.B. +.

X-RAY EXAMINATION.

Heart and mediastinum normal.
Left Lung: Recent fluffy infiltration from apex to 3rd rib.
Right Lung: No obvious disease.
Diagnosis: Pulmonary Tuberculosis.
Type: Broncho-pneumonic.
Site: Left upper zone.
Treatment: Artificial Pneumothorax.
Result: Good collapse of all zones.

REMARKS:

This case illustrates the importance of sputum examination. It emphasises the necessity of careful examination of the supra-clavicular regions where alone definite clinical signs were found. On these signs the case could easily be diagnosed, but the symptoms alone were significant.

C L I N I C A L R E P O R T.

Case No. 22.

M.T. Age 20 years, Female, Checker (Biscuit Factory.) Single

First Attendance: 11.10.30.

Reason for Attendance: Referred by panel doctor on account of cough and spit (T.B. +).

Family History: No history of tuberculosis.

Past History: ? Appendicitis Xmas 1929. No operation.

Present History:

Date of onset of first definite symptom: Xmas 1929.
Mode of onset: Cough and pain in Right Iliac fossa.

Present State: Nutrition fairly good. Colour good.

SYMPTOMS.

Cough.....Yes.
Sputum.....Slight
Thick Yellow.
Haemoptysis.....No.
Dyspnoea.....Yes.
Pain.....Right side of Chest.
Sweats.....No.
Appetite.....Fair.
Bowels.....Regular.
Vomiting.....No.
Height.....5ft5ins.
Weight.....7st9lbs.
Highest known weight.8st6lbs
Temperature.....98.2°F
Pulse.....104.
Hoarseness.....
Occasional.
Other Symptoms.....Nil.

SIGNS.

Inspection: No abnormality discovered.
Palpation: No abnormality discovered.
Percussion: No abnormality discovered.
Auscultation: Post-tussic crepitations from 3rd to 6th ribs.anteriorly, and from 6th to 8th ribs posteriorly, over Right Lung.

SPUTUM EXAMINATION: 1.10.30. T.B. +.

X-RAY EXAMINATION.

Heart and mediastinum normal.
Right Lung: Fibrous infiltration and excavation confined to the inner area of the middle zone, and localised hazy mottling along lower border of middle lobe.

DIAGNOSIS: Pulmonary Tuberculosis.
Type: Broncho-pneumonic.
Site: In close proximity to the Right root.
Treatment: Artificial Pneumothorax.
Result: Healing.

REMARKS:

This case at first attendance was a straight-forward case for diagnosis. The mode of onset would suggest that the first symptom was pain over the appendix region. The lesion was posterior in situation and pleurisy was probably associated. Pain in the Right Iliac fossa should be regarded with suspicion, and, in the absence of definite diagnostic criteria, the lungs should be investigated. X-Ray examination after artificial Pneumothorax treatment and Phrenic avulsion shows only a very slight haziness at the root.

CLINICAL REPORT.

Case No. 23.

A. P. Age 24 years, Male, Single. Kitchen hand.

First Attendance: 6.3.30.

Reason for Attendance: Referred by panel doctor on account of cough and spit, and family history of tuberculosis.

Family History: Brother died of Pulmonary Tuberculosis in February 1929.

Past History: No serious illness. Accident when aged 5 years - Cart wheel went over chest.

Present History: Date of onset of first definite symptom February, 1930.
Mode of onset. Languor and loss of appetite.

Present State: Nutrition fair. Colour good.

SYMPTOMS.

Cough.....Yes.
Sputum:.....Yes,
moderate grey.
Haemoptysis.....No.
Dyspnoea.....Slight.
Sweats.....No.
Appetite.....Fair.
Bowels.....Regular.
Vomiting.....No.
Height.....5ft5½ins.
Weight.....8st3½lbs.
Highest known
weight...Not known.
Temperature.....102°F.
Pulse.....96.
Hoarseness.....No.
Other Symptoms.....Nil.

SIGNS.

Inspection: No abnormality discovered except hectic flush.
Palpation: Movement of left side of chest slightly impaired.
Percussion: Slight impairment over left subclavicular region. Excursion of diaphragm limited on left side.
Auscultation: Post-tussic crepitations in left subclavicular region.

SPUTUM EXAMINATION.

10.3.31. T.B. + (first positive sputum)

X-RAY EXAMINATION.

Heart and mediastinum normal.
Left lung: Area of infiltration with cavitation involving the upper and middle zones between the 4th and 6th ribs.
Right lung: No definite infiltration but a small hazy area is present between the 5th and 6th ribs.

DIAGNOSIS: Pulmonary Tuberculosis.
Type: Pneumonic.
Site: Upper and middle zones of right lung.
Treatment: Artificial Pneumothorax.

REMARKS: This is a straightforward case for diagnosis, but was referred by the practitioner, who had observed it for two weeks, for observation and investigation. His note referred only to family history and not to symptoms or clinical signs. The short history illustrates the limited time at the disposal of the diagnostician. The two weeks delay probably accounts for the failure of artificial pneumothorax to cure the case. While the left lung remains collapsed, two daughter infiltrations are now evident in the right lung.

C L I N I C A L R E P O R T.

Case No. 24.

C.N. Age 22 years, Female, Single. Tie maker.

First Attendance: 3.12.29.

Reason for Attendance: Referred by panel doctor on account of cough.

Family History: No history of Tuberculosis.

Past History: No serious illnesses.

Present History: Date of onset of first definite symptom October, 1929.
Mode of onset: Cough.

General Condition: Nutrition and colour fair.

SYMPTOMS.

Cough.....Slight.
Sputum.....Slight.
Haemoptysis...29.1.30. streak.
Dyspnoea.....Slight.
Pain.....No.
Sweats.....No.
Appetite.....Fair.
Bowels.....Regular.
Vomiting.....No.
Height.....5ft5ins.
Weight.....8st.
Highest known weight.....9st.
Temperature.....97°F.
Pulse.....112.
Hoarseness.....No.
Other Symptoms.....Nil.

SIGNS.

Inspection: Impaired movement at right base.
Palpation: Confirms impaired movement at right base.
Percussion: Impaired note over right base.
Auscultation: Crepitations suggestive of fibrosis over right axilla, right root and right base.

SPUTUM EXAMINATION: 3.2.30. T.B. +.

X-RAY EXAMINATION.

Heart and mediastinum normal.
Right Lung: Opacity of upper and inner area of right lower lobe, most dense above the right root, and sharply demarcated from the middle lobe.

PROVISIONAL DIAGNOSIS: Unresolved pneumonia.
FINAL DIAGNOSIS. Pulmonary Tuberculosis based on sputum examination 3.2.30.
Type of lesion: Pneumonic.
Site: Basal.
Course: Non-progressive after sanatorium treatment.

REMARKS:- The interest of this case lies in the differential diagnosis from unresolved pneumonia. The evidence was in favour of a non-tuberculous lesion until the sputum was found to contain Tubercle Bacilli. Another three positive sputum examinations were recorded later.

CLINICAL REPORT.

Case No. 25.

W. J. Age 20 years. Female; Engaged to be married. Dispatch clerk.

First Attendance: 24.11.30.

Reason for Attendance: Referred by panel doctor because of slight cough and family history of Tuberculosis.

Family History: Brother. Died P.T. (T.B. +) 21.3.30.

Past History: No serious illness.

Present History:
Date of onset of first definite symptom 22.11.30.
Mode of onset: Pain at inferior angle of Right Scapula. (1).

Present State: Colour and nutrition are fairly good. No deformity.

SYMPTOMS.

Cough.....Very slight (22.11.30).
Sputum.....No.
Haemoptysis.....No.
Dyspnoea.....No.
Pain.....Not now
Sweats.....No.
Appetite.....Good.
Bowels.....Regular.
Vomiting.....No.
Height.....5ft4ins
Weight.....8st4¼lbs
Highest known weight....8st7lbs
Temperature.....97.4°F.
Pulse.....72.
Hoarseness.....No.
Other Symptoms.....Nil.
General Condition..... Nutrition good. Colour good.

SIGNS.

Inspection: No abnormality discovered
Palpation: No abnormality discovered
Percussion: No abnormality discovered
Auscultation: No abnormality discovered.

X-RAY EXAMINATION.

Right Lung: Early infiltration at junction of middle and lower zones with early excavation.
Left Lung: Clear.

DIAGNOSIS: Tuberculous infiltration of Right Lung.
Type: Pneumonic.
Site: Lower Lobe.
Treatment: Artificial Pneumothorax.
Result: Remains under treatment: Fit for full work. Very good collapse of lung.

REMARKS:-

This is a case of early infiltration of the lower lobe in a very healthy looking young girl. The family history of Tuberculosis, the slight cough, and the history of pain, raised suspicions, which could not be confirmed by clinical examination. X-Ray examination completed the diagnosis.

The place of the general practitioner in early diagnosis is emphasised by the happy result in this case.

C L I N I C A L R E P O R T.

Case No. 26.

J. D. Age 20, Female, Single. Factory Hand.

First Attendance: 25.1.32.

Reason for Attendance: Referred to hospital by panel doctor on account of Haemoptysis and delayed recovery from Influenza.

Family History: No history of Tuberculosis.

Past History: No serious illness.

Present History:

Date of onset of first definite symptom 5th January, 1932.
Mode of onset: "Influenza" with cough, sputum and pain in the chest.

Present State: Nutrition fair. Pale.

SYMPTOMS.

Cough.....slight.
Sputum.....slight.
Haemoptysis.....Clot, 25.1.32.
Pain.....Left side
Sweats.....No.
Appetite.....Good.
Bowels.....Regular
Height.....5ft2ins.
Weight.....7st4lbs.
Highest known weight..7st9lbs.
Temperature....102°F.
Pulse.....90.
Other Symptoms....Nil.

SIGNS.

Inspection: No abnormality discovered.
Palpation: No abnormality discovered.
Percussion: Impairment Left upper lobe.
Auscultation: Showers of post tussic crepitations under left clavicle.

SPUTUM: 27.1.32. T.B. +.

X-RAY EXAMINATION.

Heart and mediastinum normal.
Right Lung: Clear.
Left Lung: Infiltration of upper and middle zones (densest just below clavicle) and to a lesser degree in lower zone.

DIAGNOSIS: Pulmonary Tuberculosis.
Site: All zones left lung.
Type: Broncho pneumonic.
Treatment: Artificial Pneumothorax.
Result: Doing well.

REMARKS:-

This case illustrates the so called "Influenza" which is so often allowed to pass without full investigation. The result of artificial pneumothorax treatment shows that prognosis is hopeful if diagnosis is not too long delayed. The haemoptysis was undoubtedly an advantage to the patient in that it accelerated her being brought under treatment. The symptoms associated with the febrile illness should have directed attention to the chest immediately.

CASE No. 5.

Dec 1931.

DISEASE

P.T.

NOTES OF CASE

NAME { NEWMAN Bridget

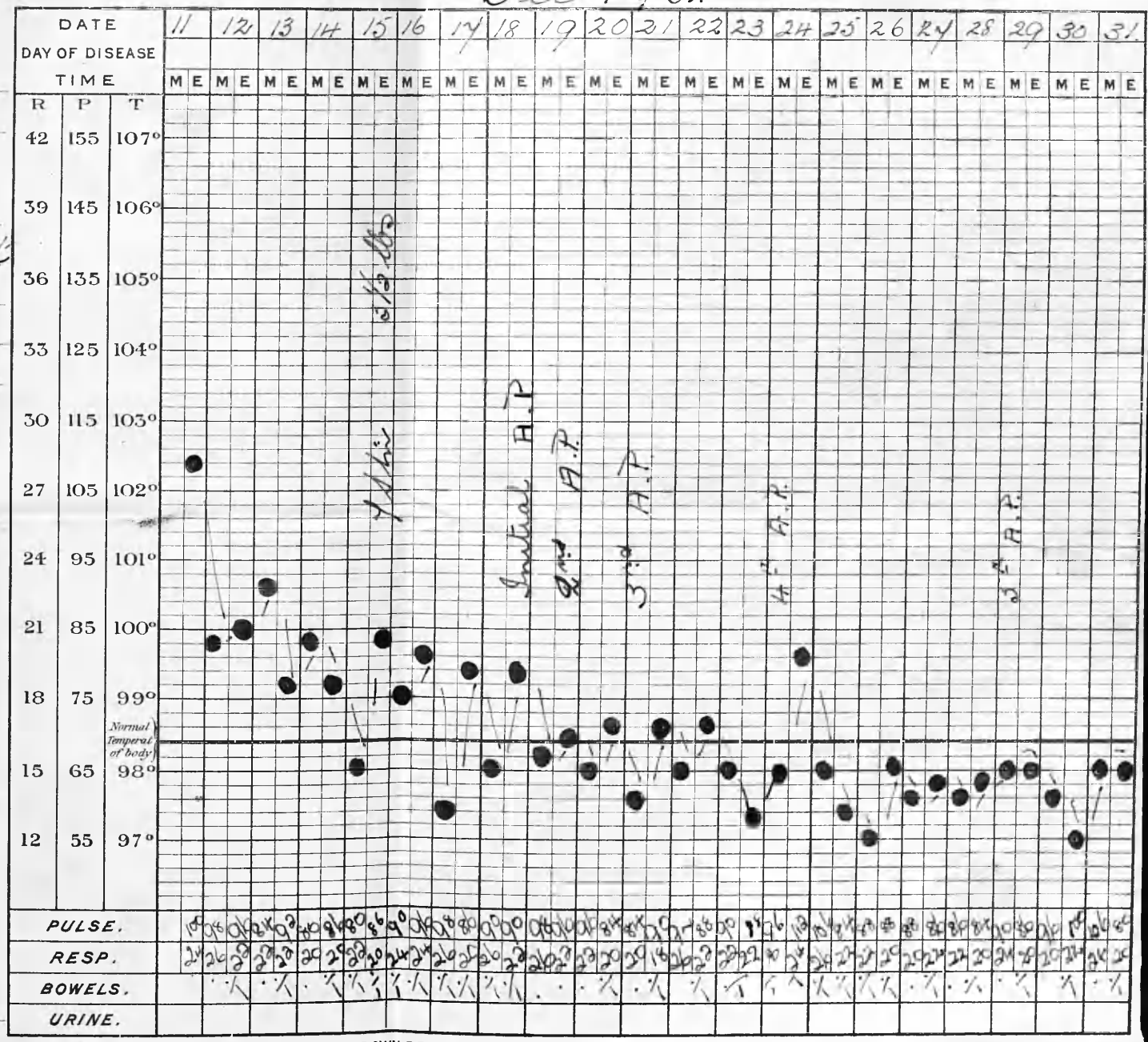
AGE 14 yrs

DIET

CASE BOOK Nº

DATE OF ADMISSION
11. 12. 31

RESULT



Down Bros Hospital Temperature Chart. DOWN BROS., Ltd., 21 & 23, ST THOMAS'S STREET, LONDON, S.E.1. Entered at Stationers Hall

CASE No. 8.

Form GH 334.

London County Council.
PUBLIC HEALTH DEPT.

Temperature Chart

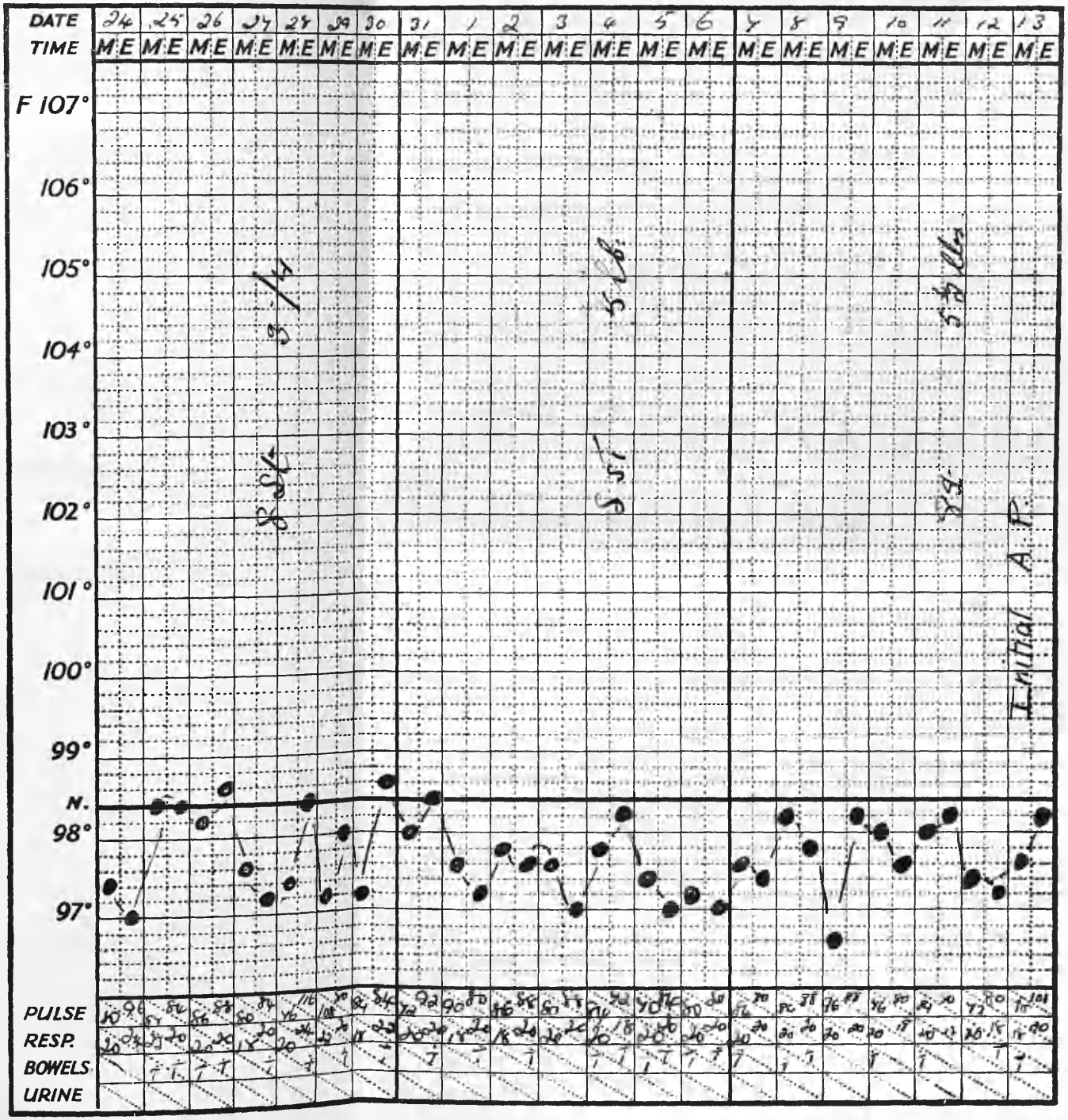
Name Reardon, Catherine

Case Paper No.

Ward

Date of Admission 23. 3. 32.

Age on Admission 15



50,000—(H. 18844/24a) 4.2.32.

Form GH 334.

London County Council.
PUBLIC HEALTH DEPT.

Temperature Chart.

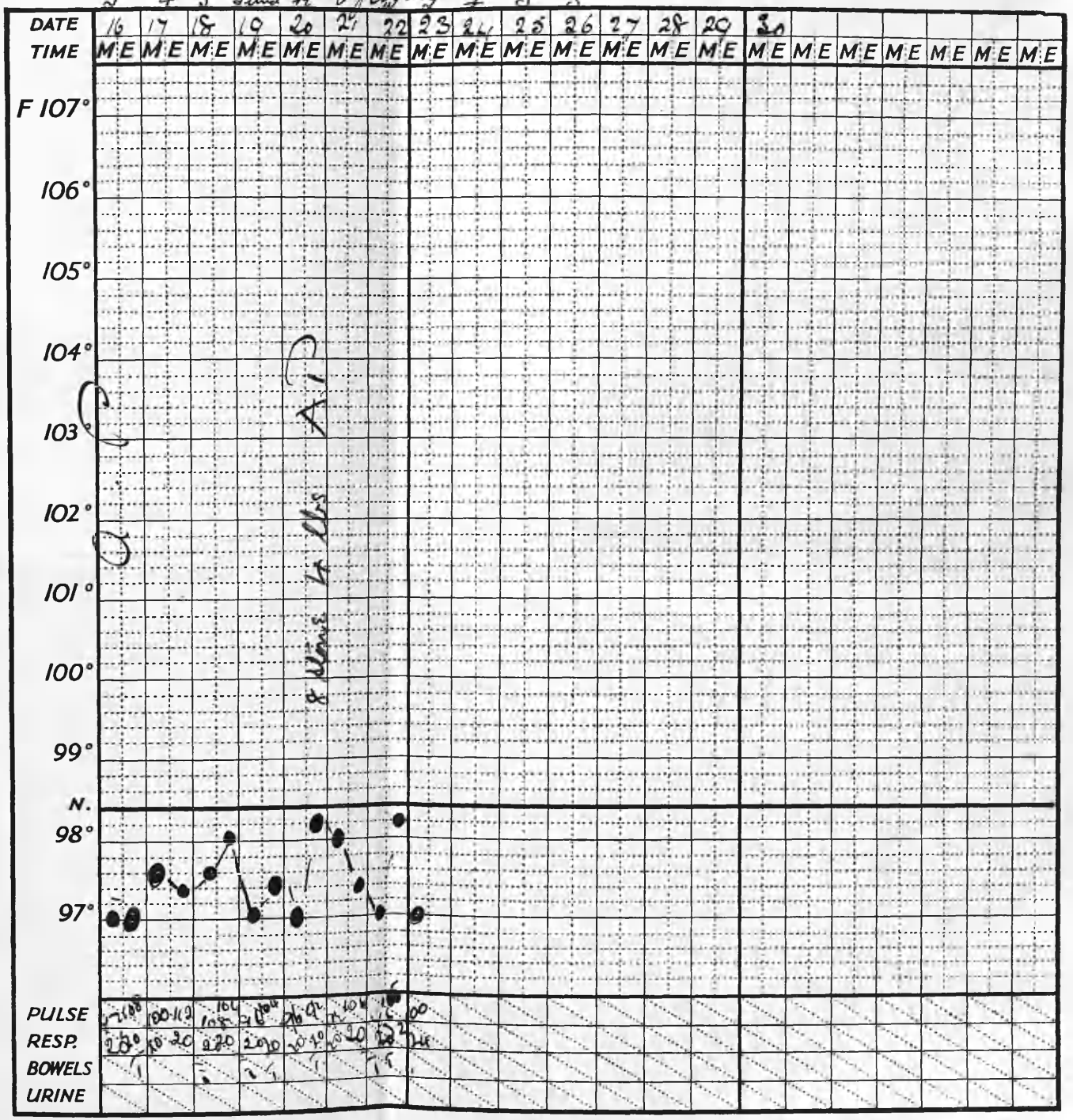
Name Catherine Rinchen

Case Paper No.

Ward B7

Date of Admission 23/3/32

Age on Admission 18



50,000—(H. 16950/24A) 23.6.31.

CASE. No. 26.

January 1932.

DISEASE

Haemoptysis

NOTES OF CASE

NAME { DAVIS Jessie

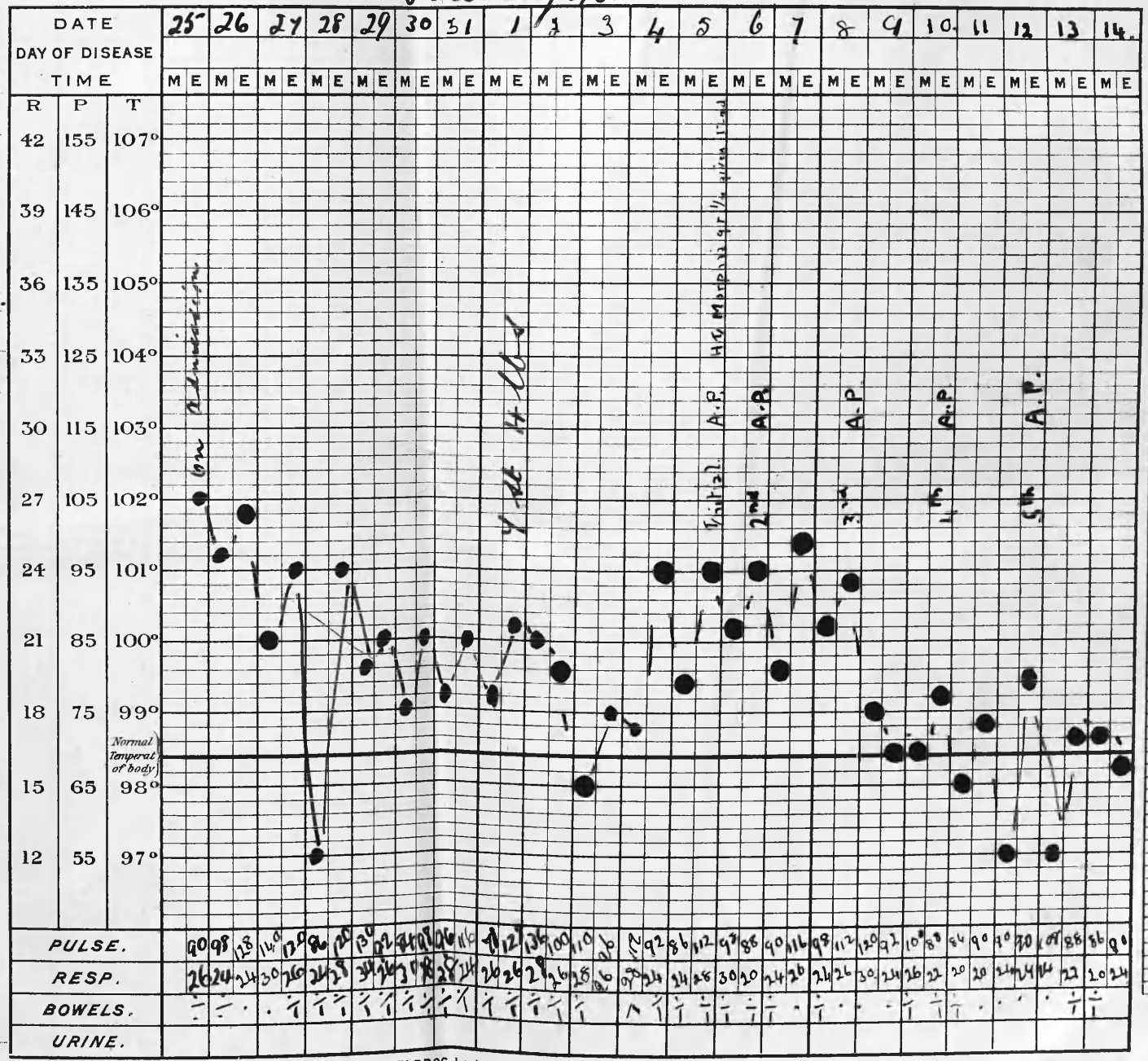
AGE 20 years.

DIET

CASE BOOK No

DATE OF ADMISSION
25. 1. 32.

RESULT



Down Bros Hospital Temperature Chart.

DOWN BROS., Ltd., 21 & 23, ST THOMAS'S STREET, LONDON, S.E.1.

Entered at Stationers Hall.

Form GH 334

London County Council.
PUBLIC HEALTH DEPT.

Temperature Chart

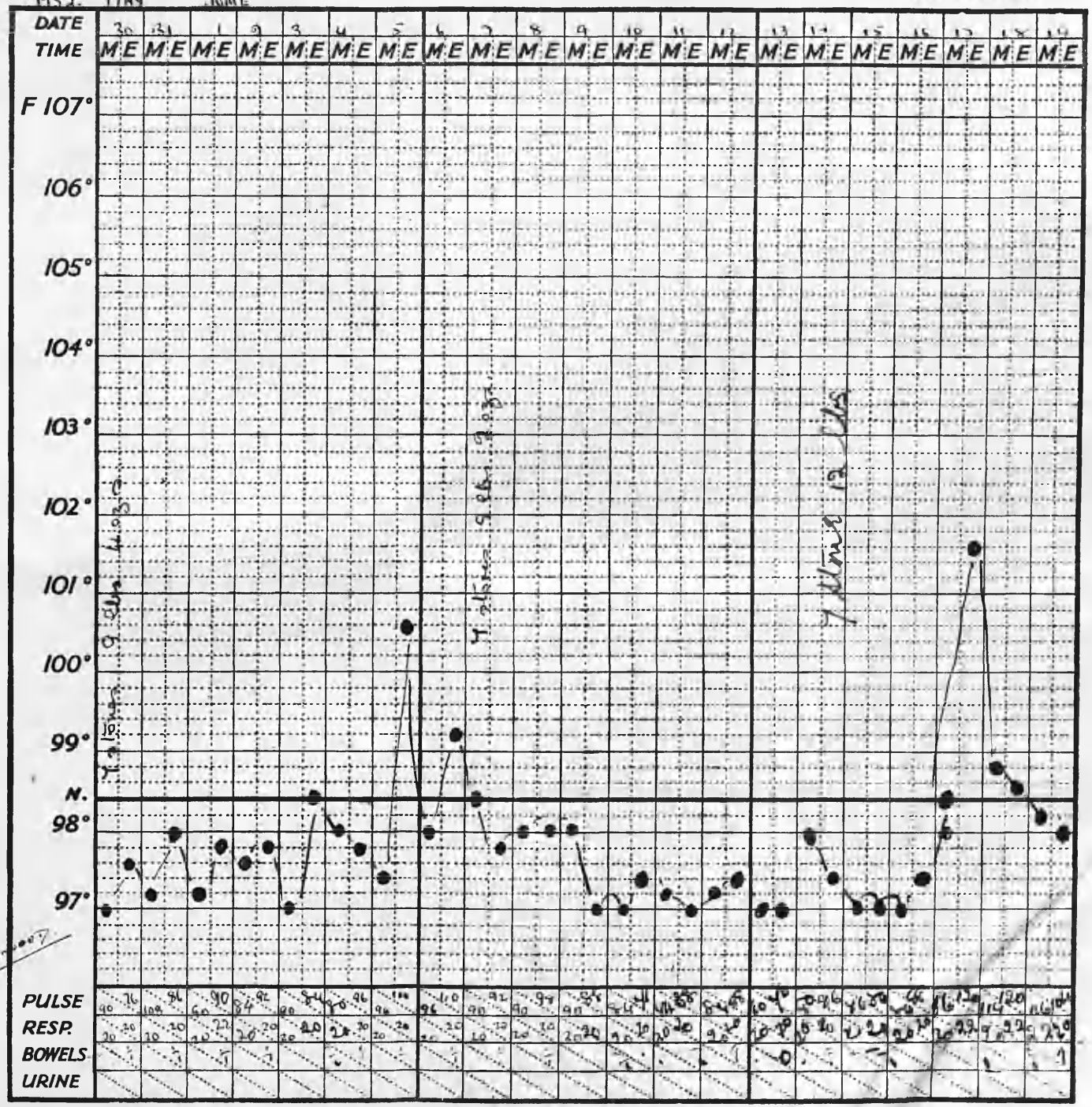
Name DAVIES. Jessie

Case Paper No.

Ward B7

Date of Admission 25. 1. 32.

Age on Admission



50,000—(H. 18844/24A) 4.2.32.

Form GH 334.

London County Council.
PUBLIC HEALTH DEPT.

Temperature Chart.

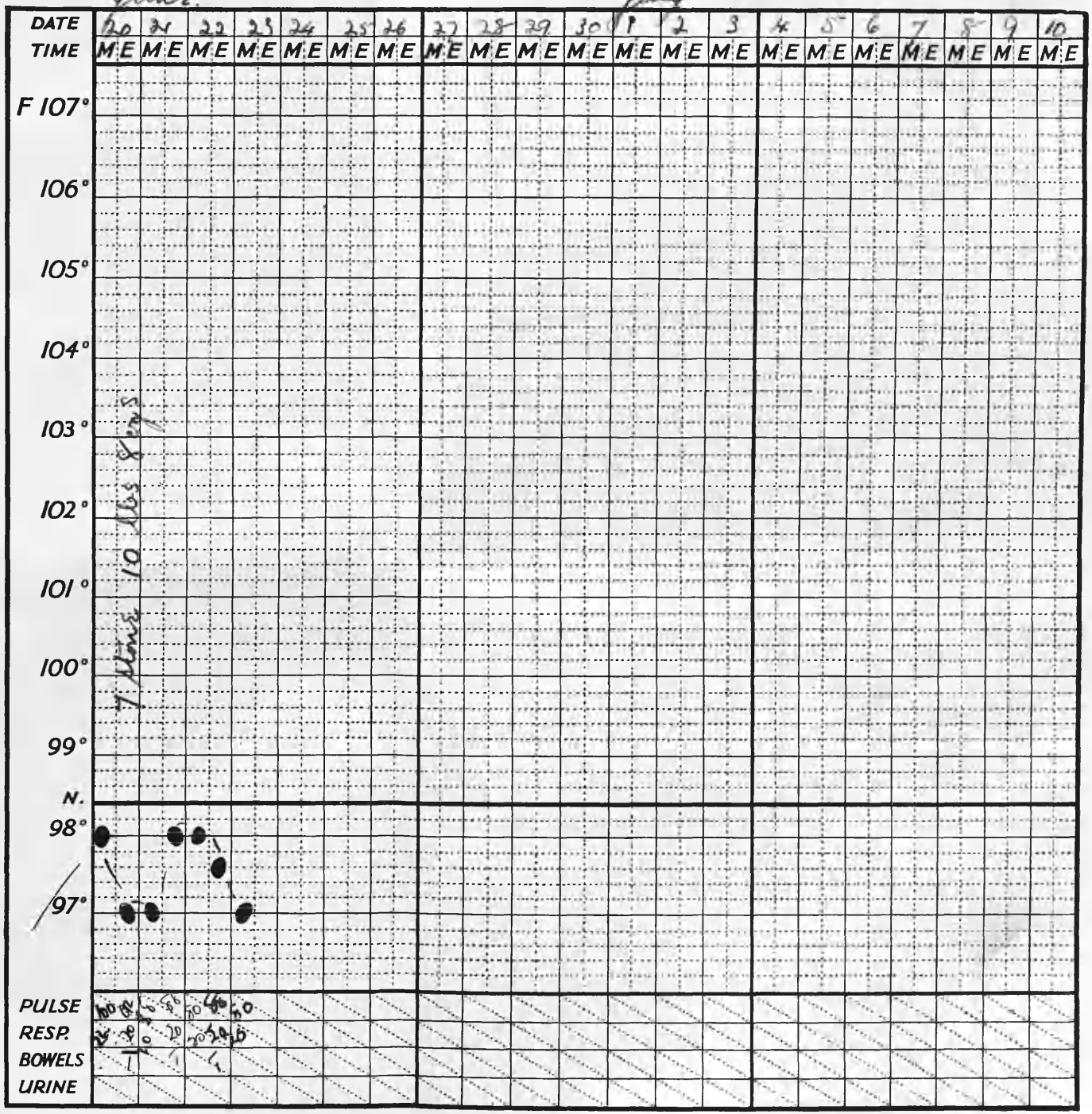
Name DAVIS Jessie

Case Paper No.

Ward B7

Date of Admission 25. 1. 32.

Age on Admission 20 yrs



50,000—(H. 16950/24A) 23.6.31.

CASE 1.
X-RAY 1.
18-5-31

EARLY INFILTRATION OF THE RIGHT UPPER LOBE

CASE 2.
X-RAY 1.
7-1-32

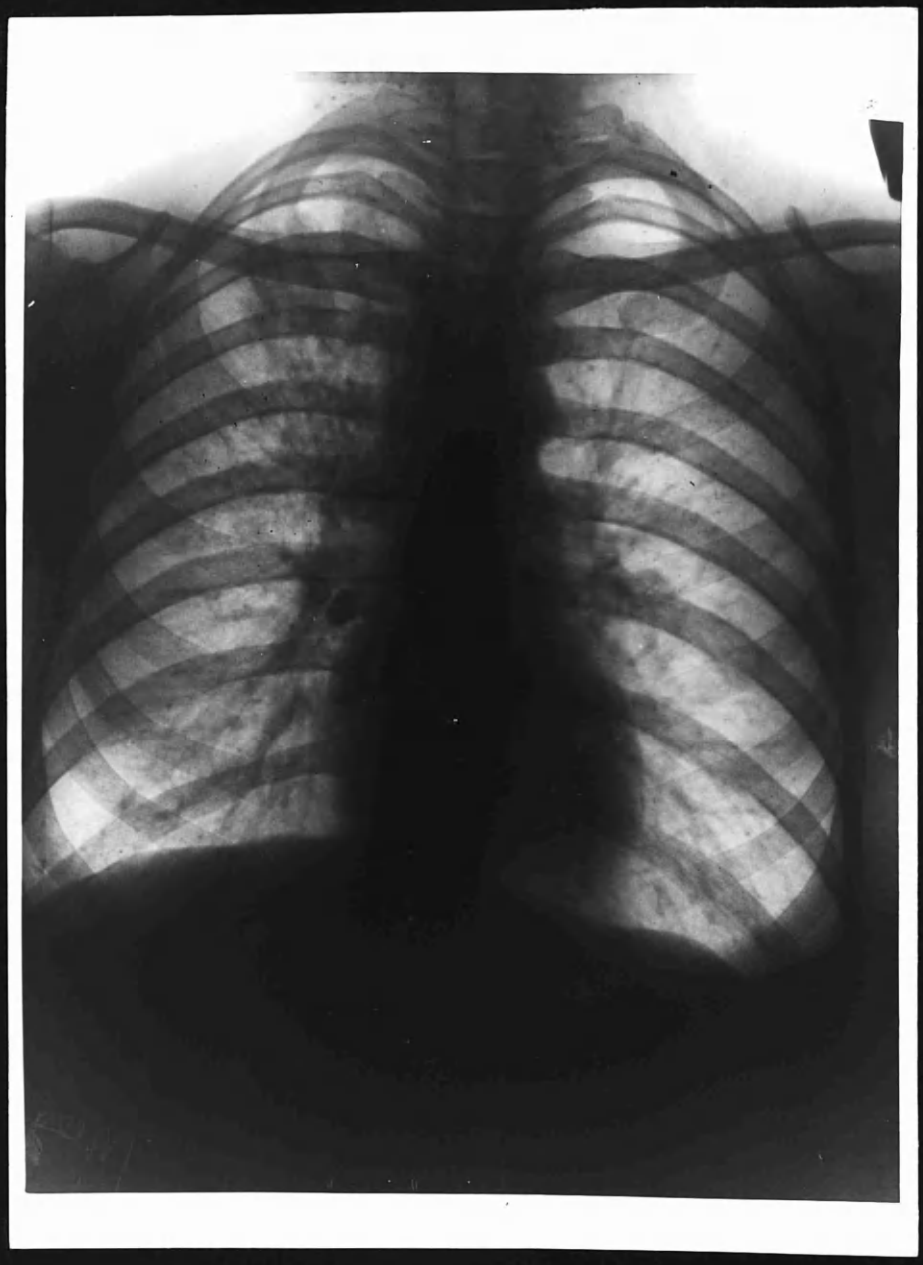
EARLY INFILTRATION OF THE RIGHT UPPER LOBE

CASE 3
X-RAY 1.
25 - 8 - 29

EARLY INFILTRATION OF THE RIGHT UPPER ZONE.

SISTER OF CASES NOS. 6. AND 7.

CASE 4.
X-RAY 1.
21-1-30

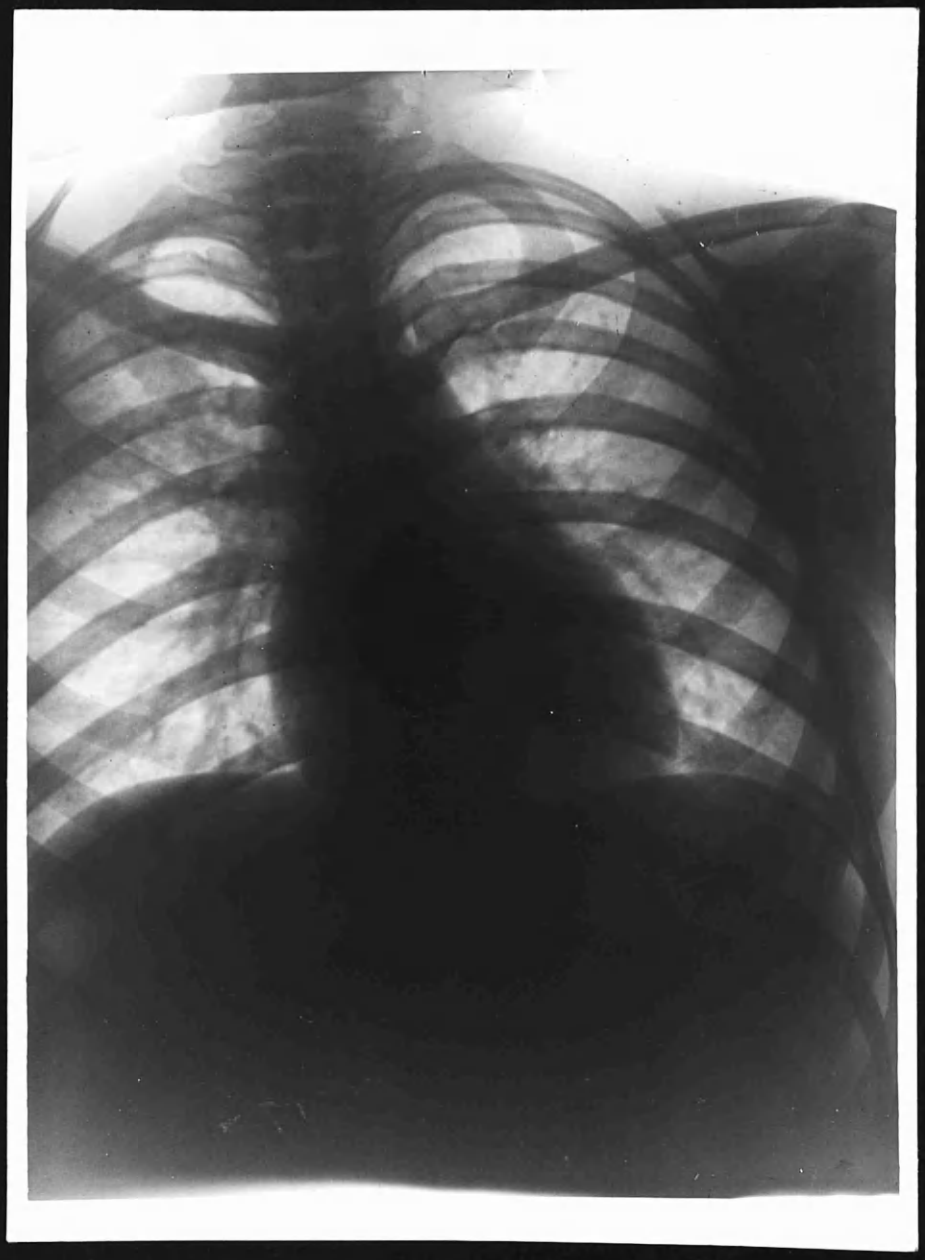


EARLY INFILTRATION OF RIGHT UPPER LOBE: NOTE THE CALCIFIED GLAND AT RIGHT ROOT.

CASE 5
X-RAY 1.
25 · 8 - 31.

EARLY INFILTRATION OF RIGHT UPPER LOBE SHOWING THE INFRACLAVICULAR SITE OF THE LESION.

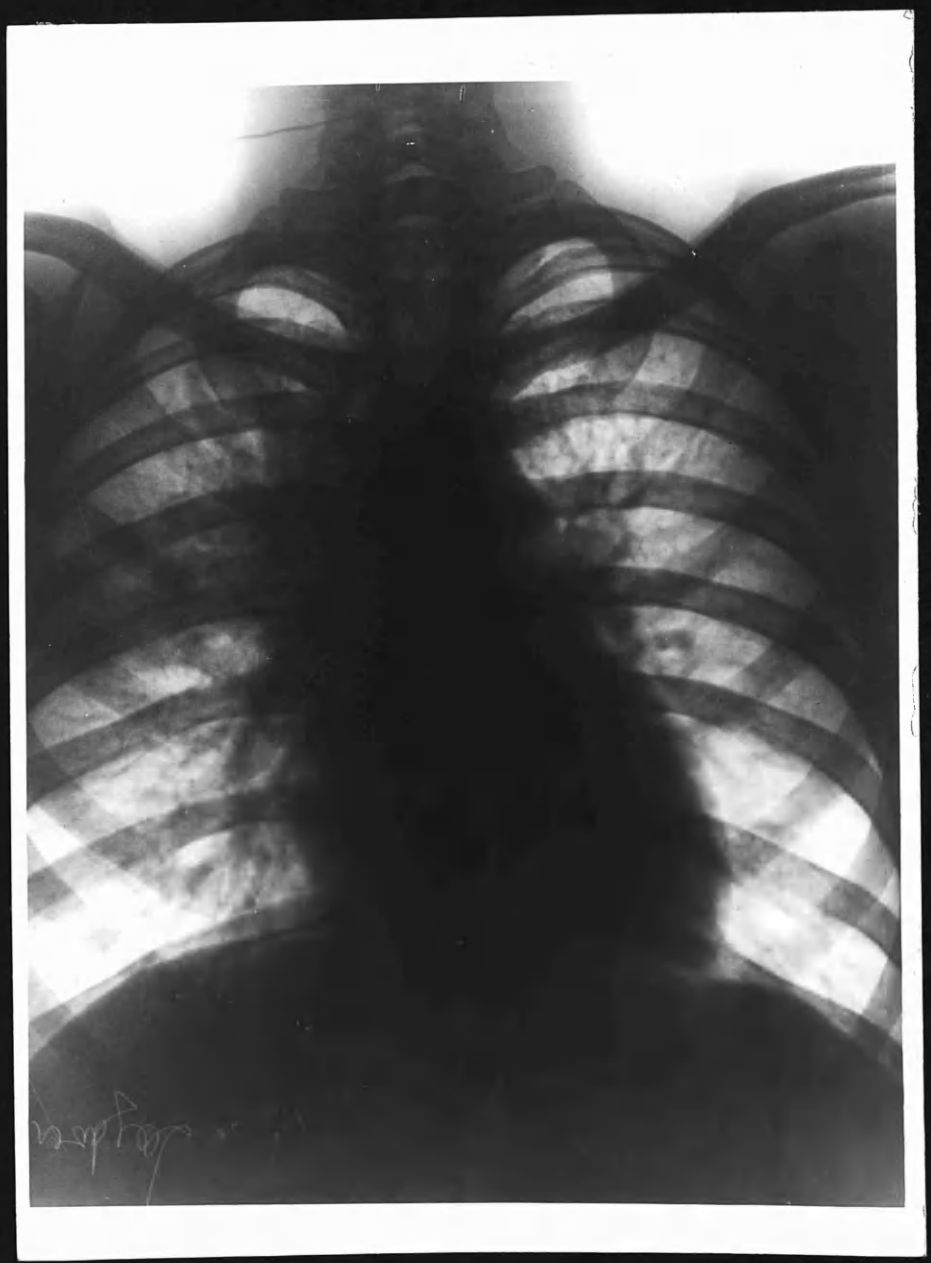
CASE 6.
X-RAY I.
10-2-31.



WEDGE SHAPED INFILTRATION IN RIGHT MIDDLE ZONE SHOWING THE INFRACLAVICULAR SITE OF THE LESION.

SISTER OF CASES 3 AND 7.

CASE 7.
X-RAY 1.
10-4-31



WEDGE SHAPED INFILTRATION OF RIGHT UPPER AND MIDDLE ZONES. SIMILAR TO CASE 6 BUT MORE EXTENSIVE.

BROTHER OF CASES 3. AND 6.

CASE 8

X-RAY 1.

8 - 9 - 30

WEDGE SHAPED INFILTRATION IN MIDDLE ZONE, HISTORY OF SHORT DURATION, PHYSICAL SIGNS ABSENT.

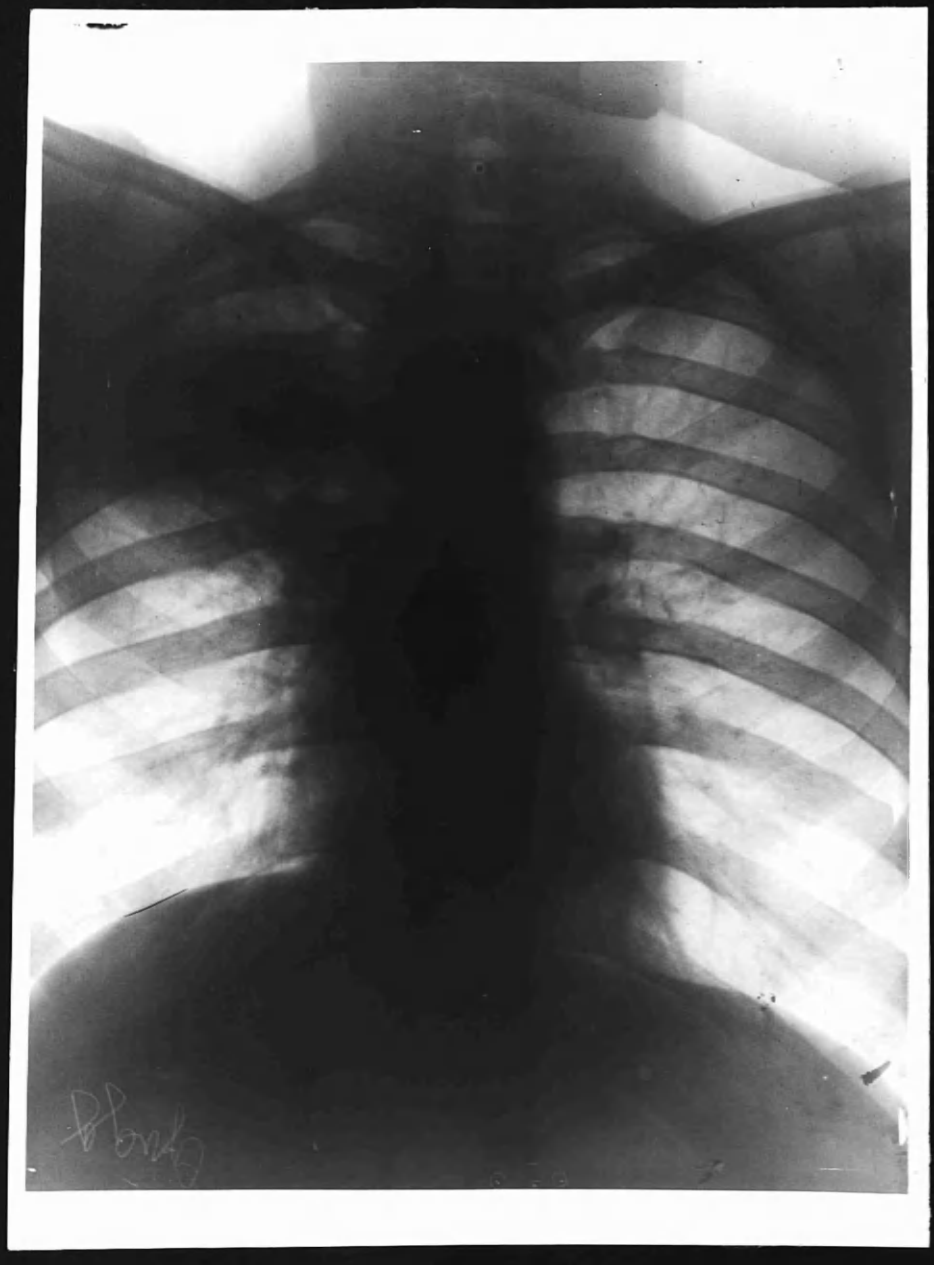
CASE 9.
X-RAY 1.
13-12-29.

PNEUMONIC TYPE OF INFILTRATION OF RIGHT UPPER AND MIDDLE ZONES.

CASE 9.
X-RAY 2
21-10-30.

ARTIFICIAL PNEUMOTHORAX TREATMENT
GOOD SELECTIVE COLLAPSE.

CASE 10
X-RAY 1.
28-6-30



PNEUMONIC CONSOLIDATION OF RIGHT UPPER ZONE : RAPIDLY PROGRESSIVE TYPE OF LESION

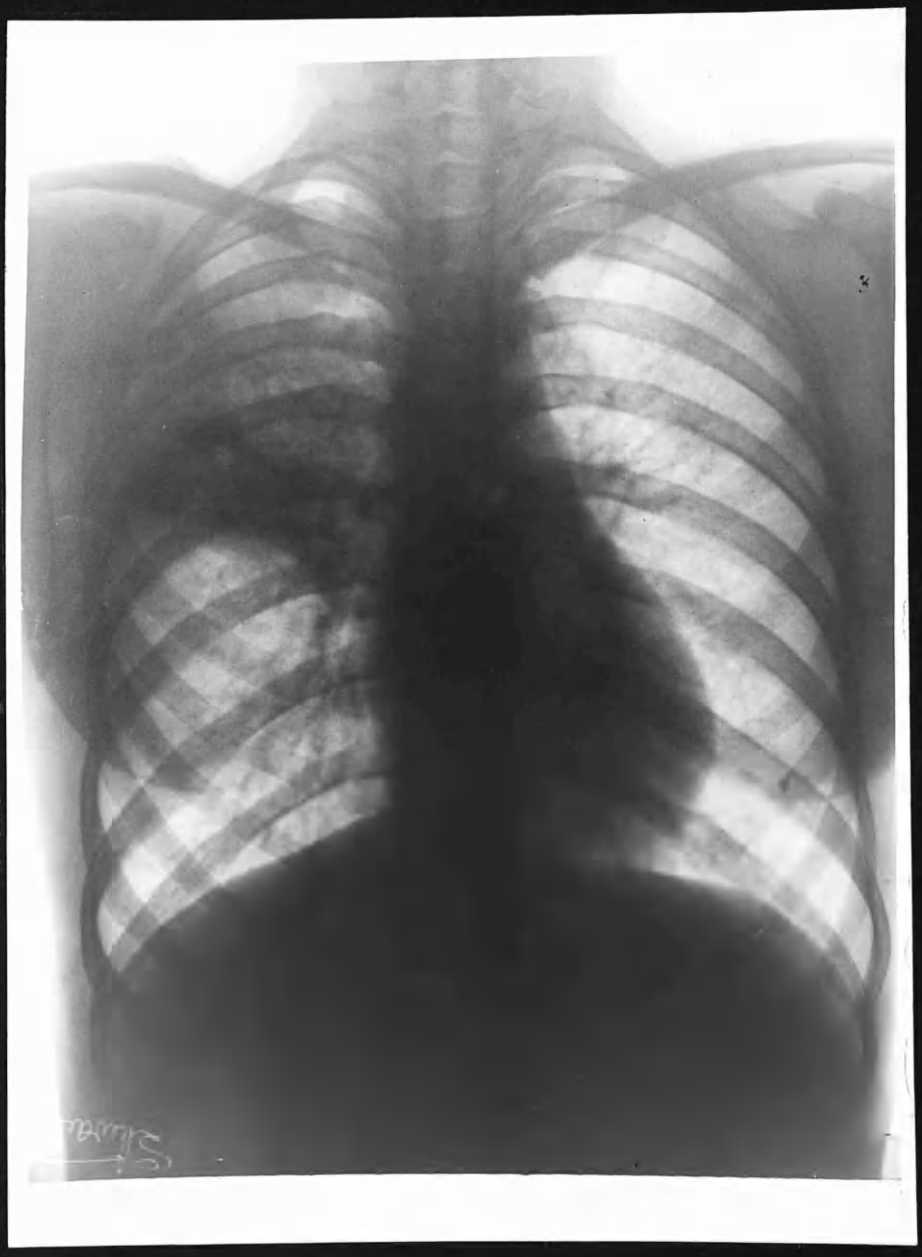
CASE 10
X-RAY 2
23 - 12 - 31

ARTIFICIAL PNEUMOTHORAX TREATMENT
GOOD SELECTIVE COLLAPSE. FREE
FLUID PROBABLY DUE TO BREAKING
OF STRING ADHESION

CASE 11.

X-RAY 1

16-2-32.



DIAGNOSED IN HOSPITAL AS UNRESOLVED PNEUMONIA AND DISCHARGED. SHOWS EVIDENCE OF INTERLOBAR PLEURISY. MOTTLED EFFECT AND EVIDENCE OF SOFTENING SHOULD HAVE CONFIRMED DIAGNOSIS OF TUBERCULOSIS.

CASE 11.
X-RAY 2.
7. 6. 32.

SAME CASE FOUR MONTHS LATER:
EXTENSIVE BILATERAL DISEASE:
THE TRAGIC EFFECT OF WRONG DIAGNOSIS.
COMPARE RESULT WITH THAT OF
PRECEDING CASES.

CASE 12

X-RAY 1

8-12-30

PNEUMONIC TYPE OF INFILTRATION OF UPPER AND MIDDLE ZONES. THIS CASE IS BEING TREATED BY ARTIFICIAL PNEUMOTHORAX WITH GOOD RESULTS.

CASE. 13
X-RAY 1
6-8-29.

EARLY INFILTRATION OF LEFT UPPER LOBE
NOTE THE SUBCLAVICULAR SITE OF THE LESION

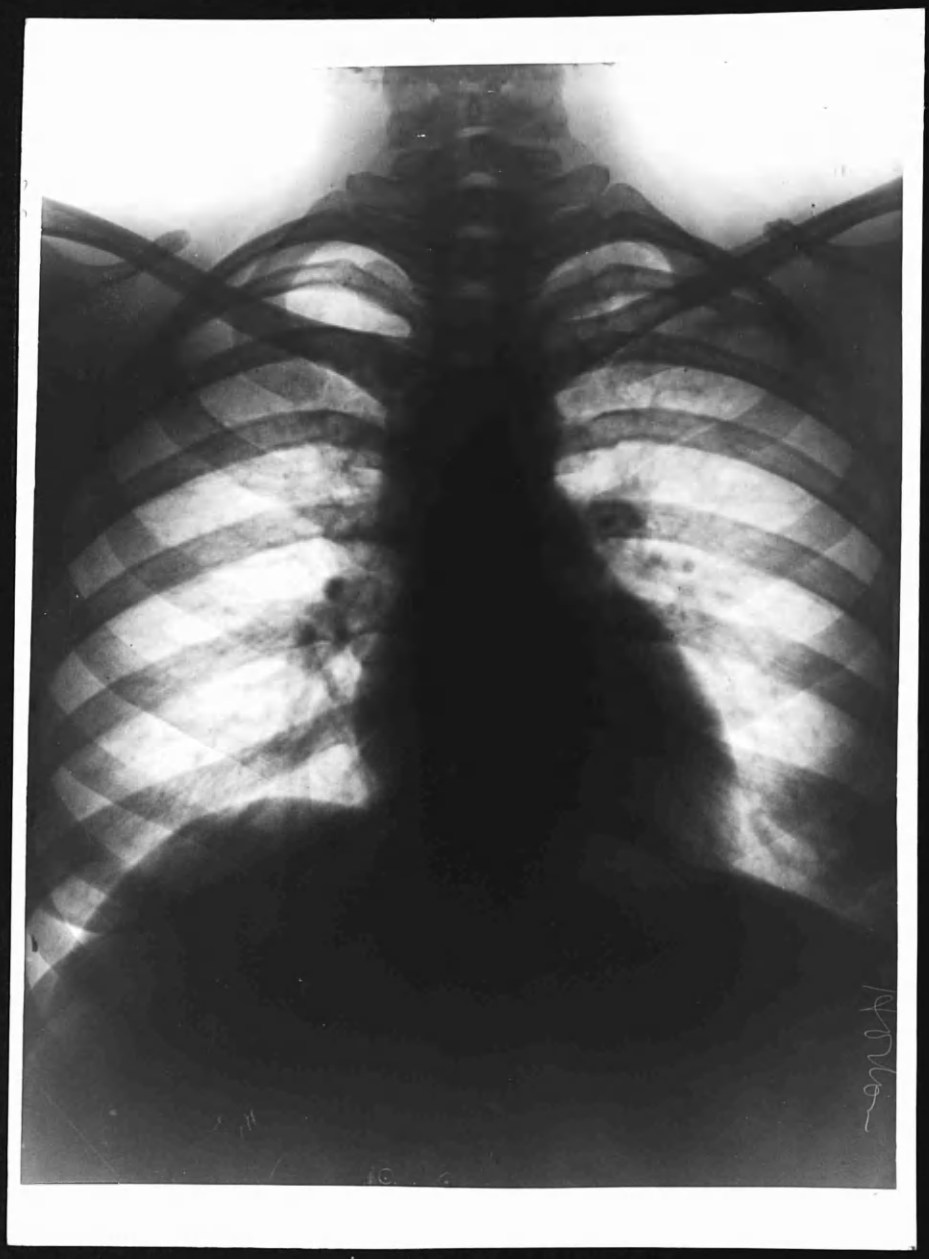
CASE 14

X-RAY I

30 - 9 - 30

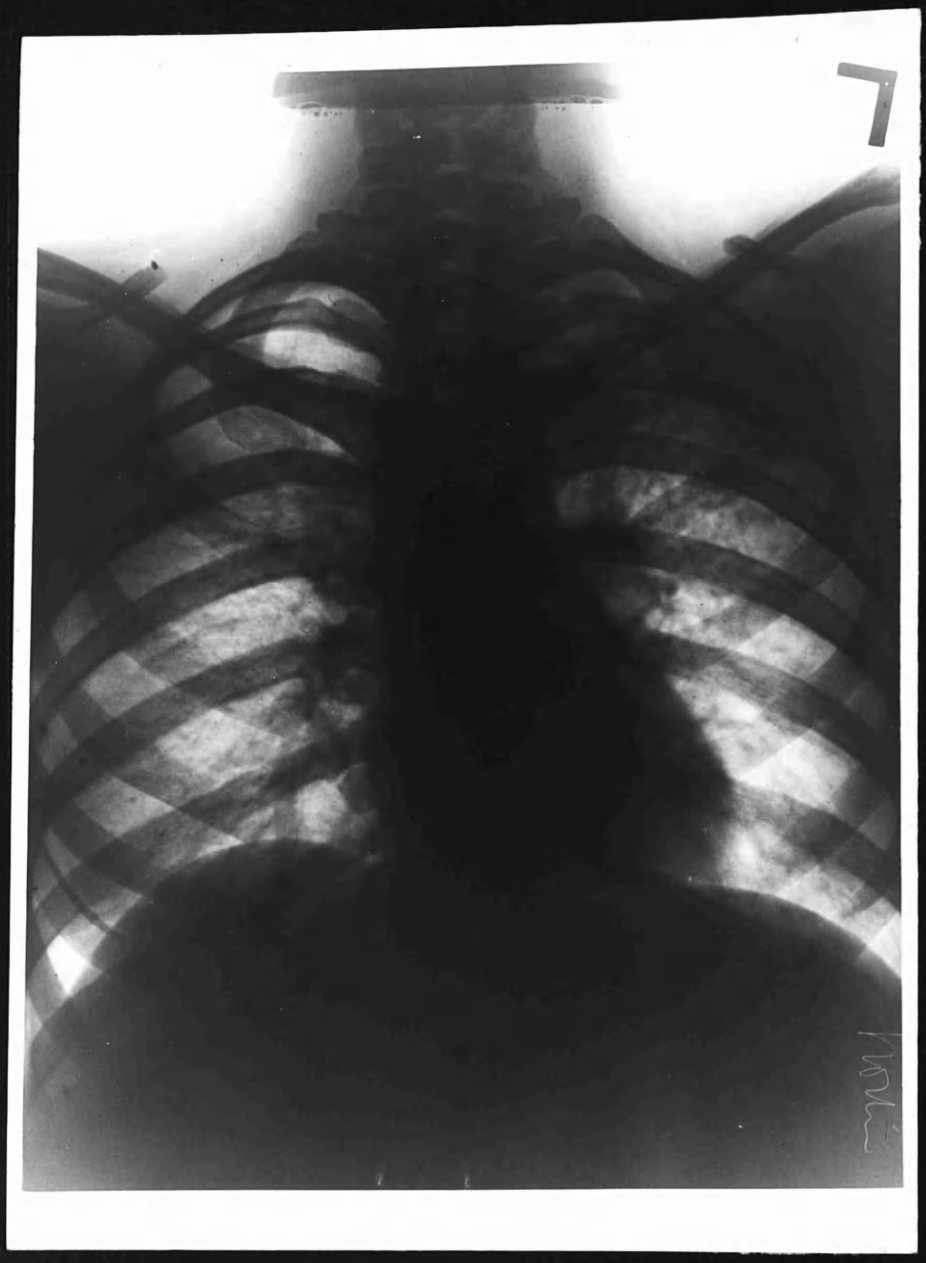
NOTE THE SMALL AREA OF INFILTRATION IN THE LEFT INFRACLAVICULAR REGION. ARTIFICIAL PNEUMOTHORAX TREATMENT WAS STRONGLY ADVISED IN THIS CASE, BUT SANATORIUM TREATMENT WAS GIVEN AFTER OBSERVATION IN HOSPITAL.

CASE 14
X-RAY 2
21-7-31.



SAME CASE AFTER SANATORIUM TREATMENT
CLASSIFIED AS QUIESCENT.

CASE 14
X-RAY 3
19 - 1 - 32



SAME CASE SIX MONTHS AFTER SANATORIUM TREATMENT. ARTIFICIAL PNEUMOTHORAX ATTEMPTED BUT ABANDONED OWING TO EFFUSION. EXTENSIVE INFILTRATION OF UPPER AND MIDDLE ZONES OF LEFT LUNG. C.F. X-RAY 1.

CASE 15

X-RAY 1

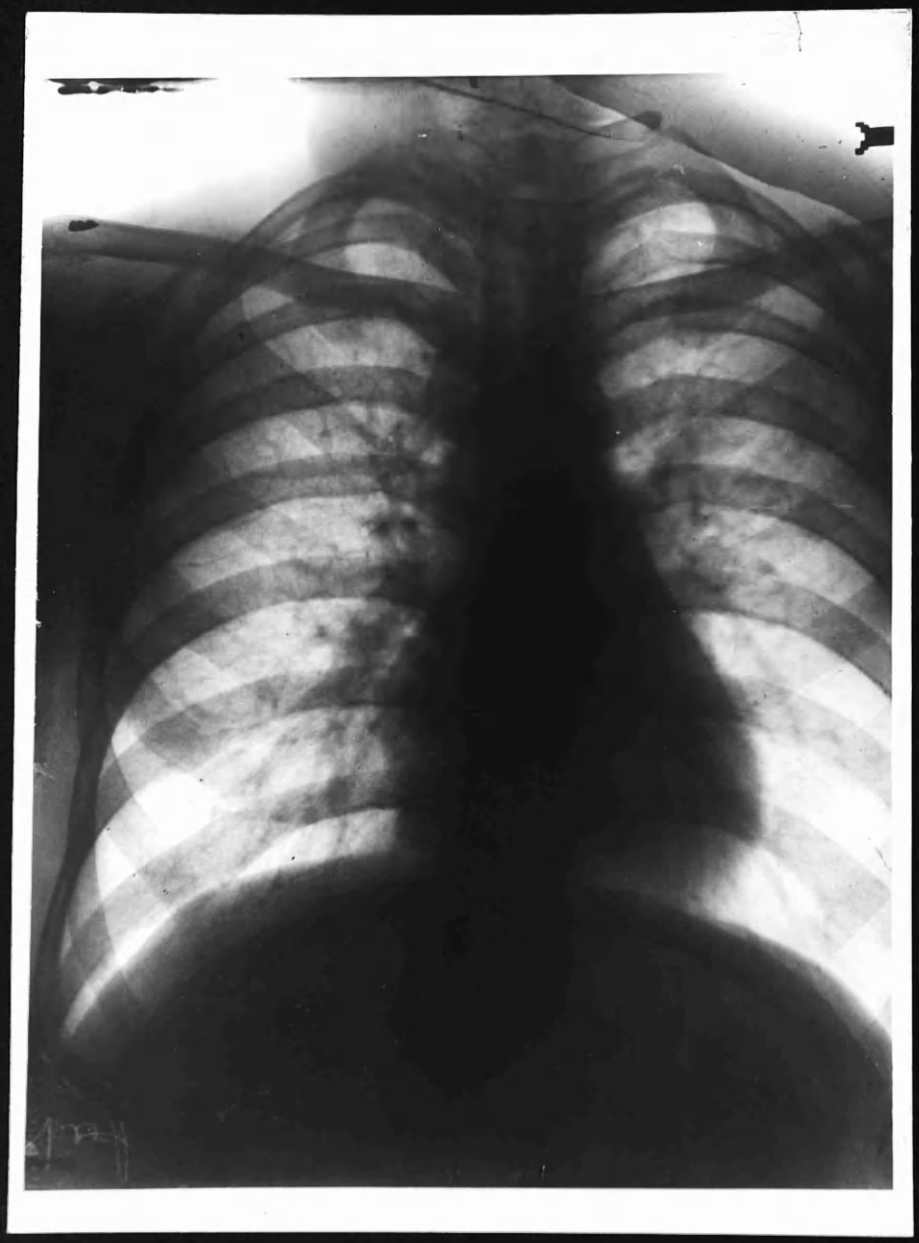
7 - 1 - 32

EARLY INFILTATION OF LEFT UPPER ZONE
IN AN APPARENTLY HEALTHY CONTACT.

CASE 16
X-RAY 1
15-10-31

VERY EARLY INFILTRATION IN LEFT MIDDLE ZONE. LANGUOR WAS THE ONLY SYMPTOM IN THIS CASE.

CASE 17
X-RAY 1
11-8-30

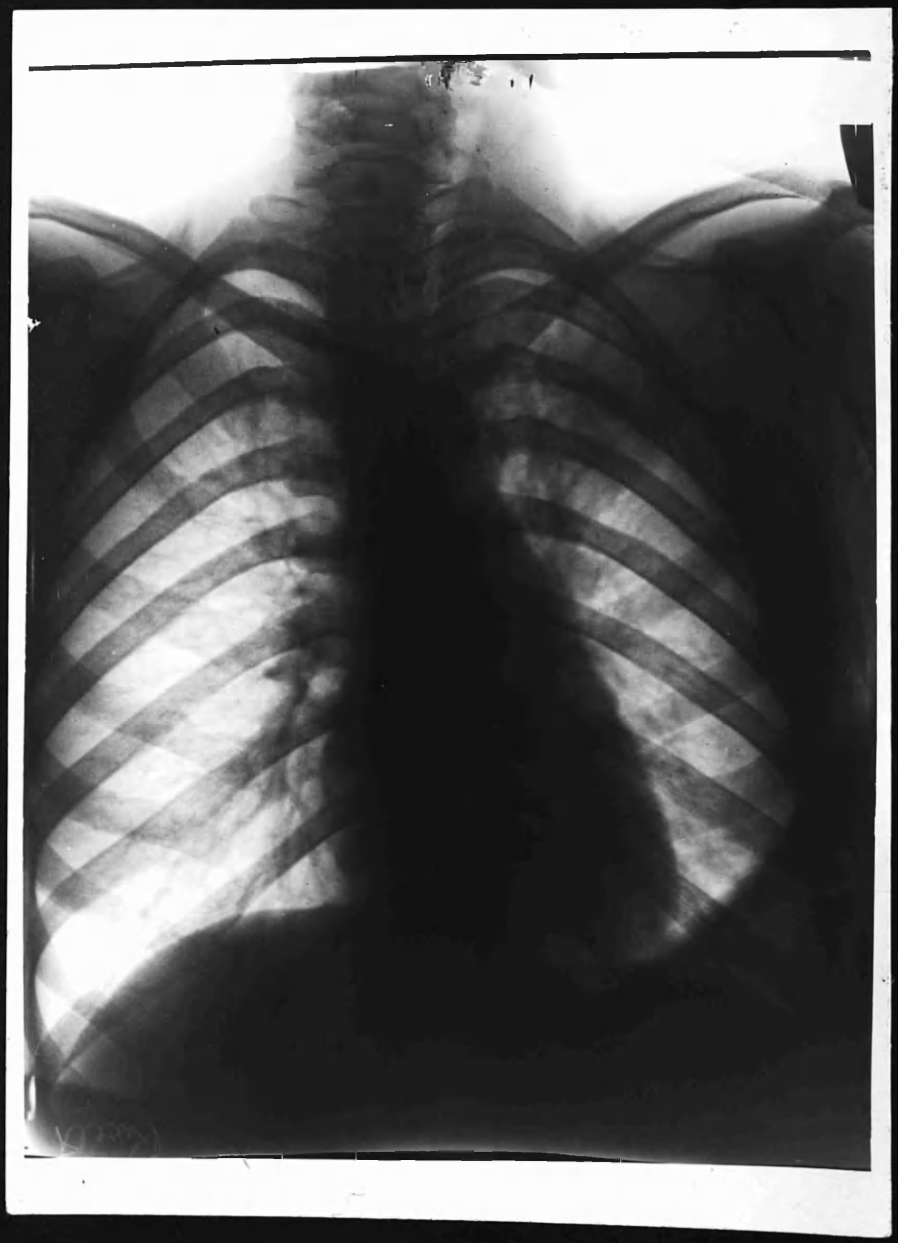


EARLY INFILTRATION IN LEFT MIDDLE ZONE

CASE 18
X-RAY 1
4-7-31.

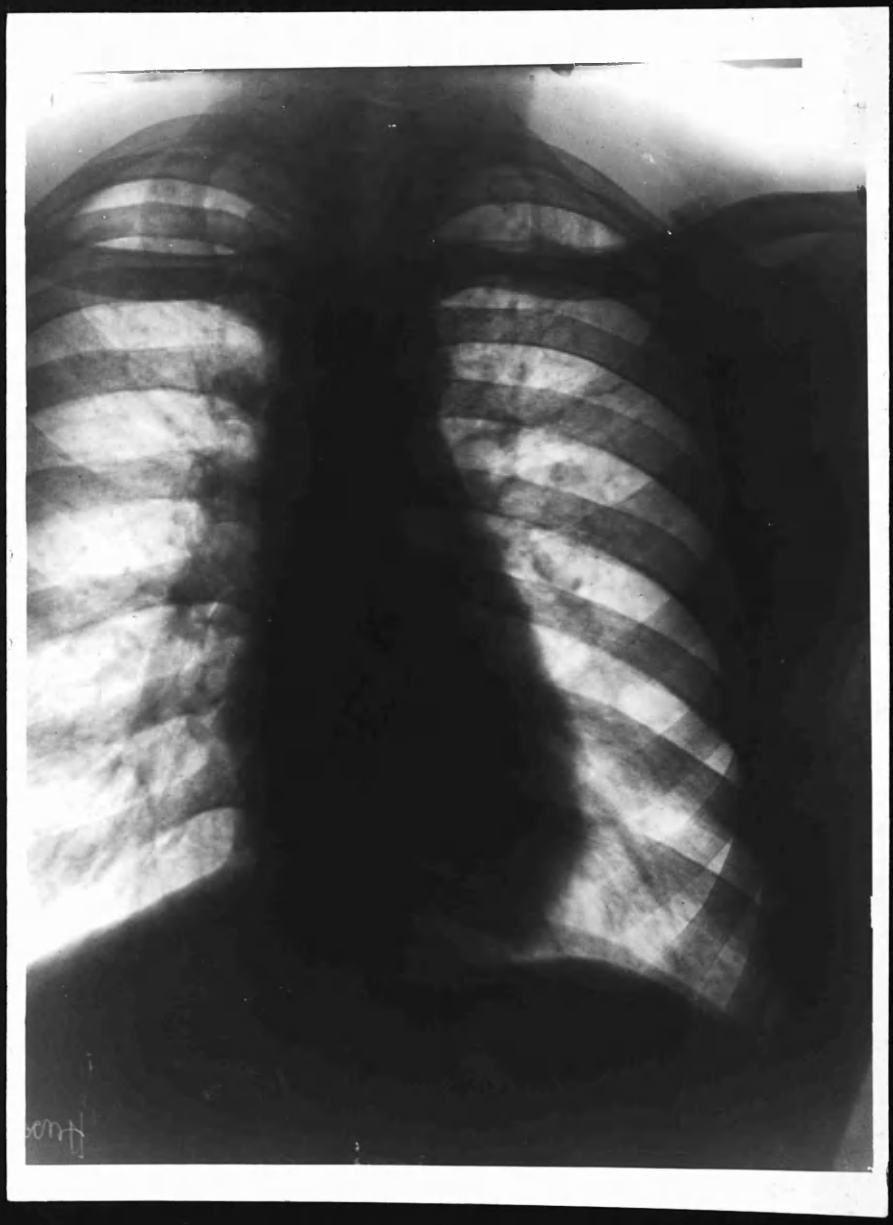
LOCALISED EXCAVATION IN LEFT UPPER ZONE, PRESUMABLY AT SITE OF ONSET

CASE 19.
X-RAY 1.
24-6-30



LOCALISED INFILTRATION IN LEFT UPPER ZONE. DIAGNOSED IN HOSPITAL AS LUNG ABSCESS

CASE 20
X-RAY 2.
8-9-31



THE SAME CASE AFTER SANATORIUM TREATMENT. APPARENT ARREST OF THE DISEASE

CASE 21.

X - RAY. 1.

1 - 6 - 31.

DIFFUSE BRONCHO - PNEUMONIC TYPE OF INFILTRATION OF LEFT UPPER ZONE.
PHYSICAL SIGNS LOCALISED ABOVE CLAVICLE

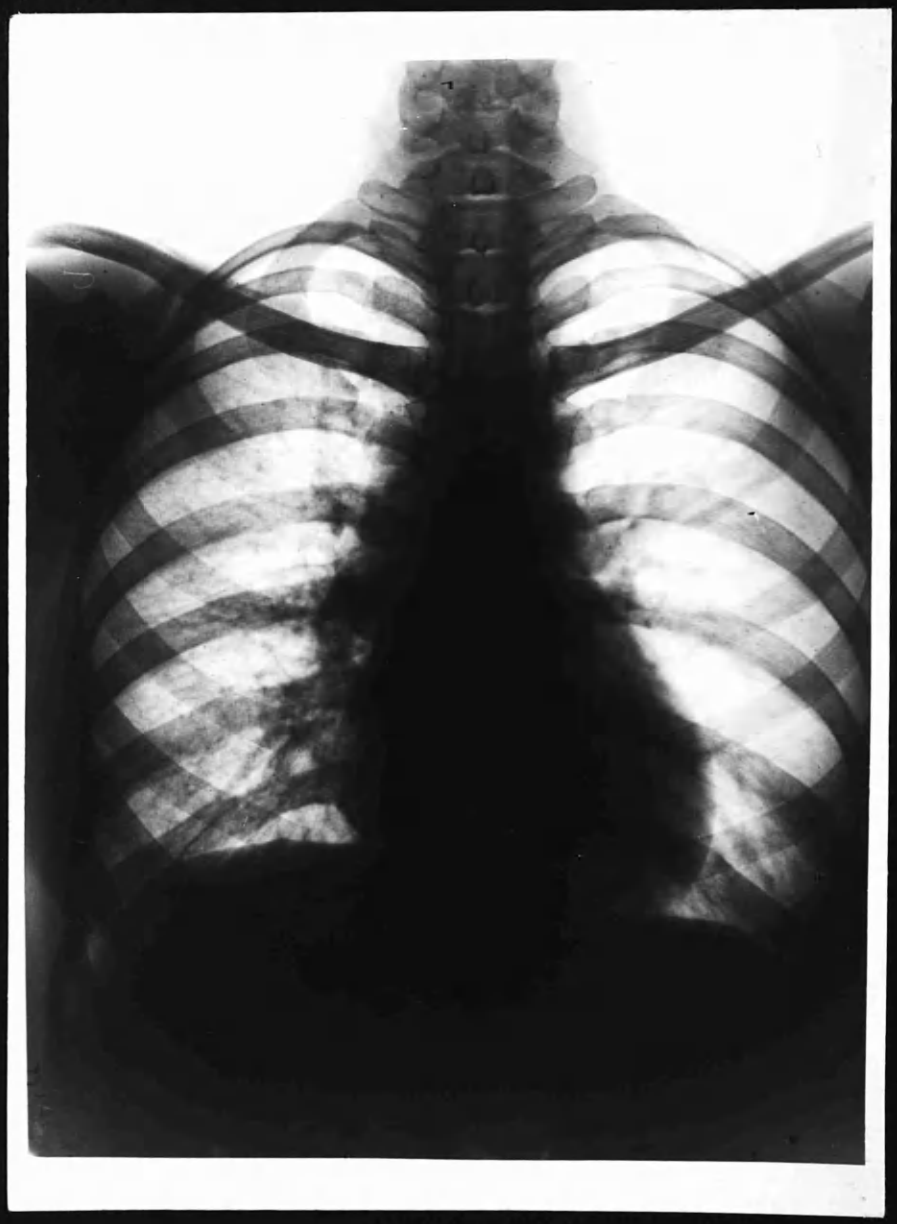
CASE 22

X-RAY 1

14-10-30

LOCALISED EXCAVATION IN RIGHT MIDDLE ZONE APPEARS TO BE NEAR ROOT BUT PROBABLY POSTERIOR IN SITUATION

CASE 22
X-RAY 2
18 - 8 - 31



THE SAME CASE AFTER SIX MONTHS TREATMENT
CAVITY NOW OBLITERATED. AS RESULT OF
ARTIFICIAL PNEUMOTHORAX TREATMENT.

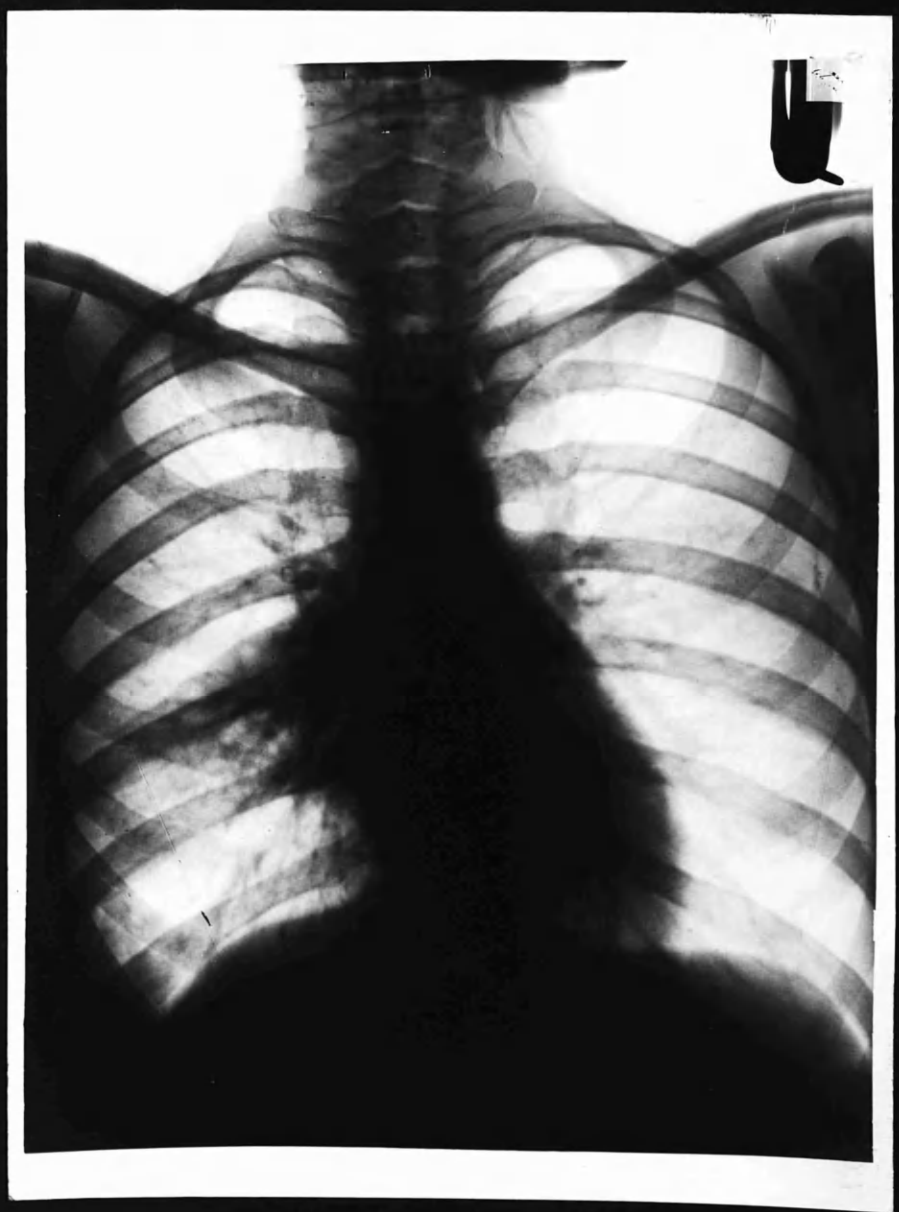
CASE 23

X-RAY I.

11 - 3 - 30

LOCALISED EXCAVATION IN LEFT MIDDLE ZONE TREATED BY ARTIFICIAL PNEUMOTHORAX WITH GOOD RESULT

CASE 24.
X-RAY 1.
3-12-29.

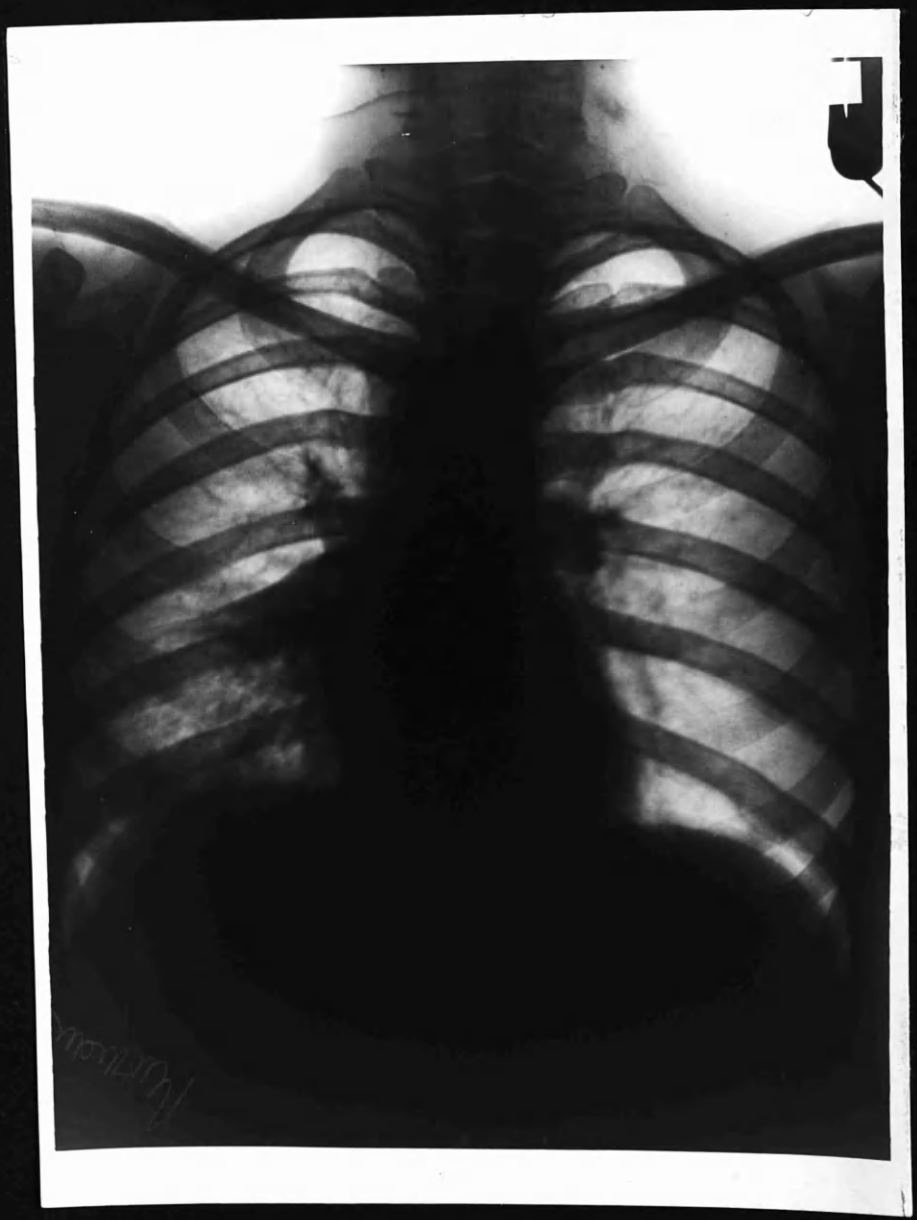


TUBERCULOUS INFILTRATION OF RIGHT LOWER LOBE
SIMULATING UNRESOLVED PNEUMONIA

CASE 24.

X-RAY 2

7-1-30.



SAME CASE. PLATE REPEATED ONE MONTH LATER: INFILTRATION SOMEWHAT MORE DEFINED

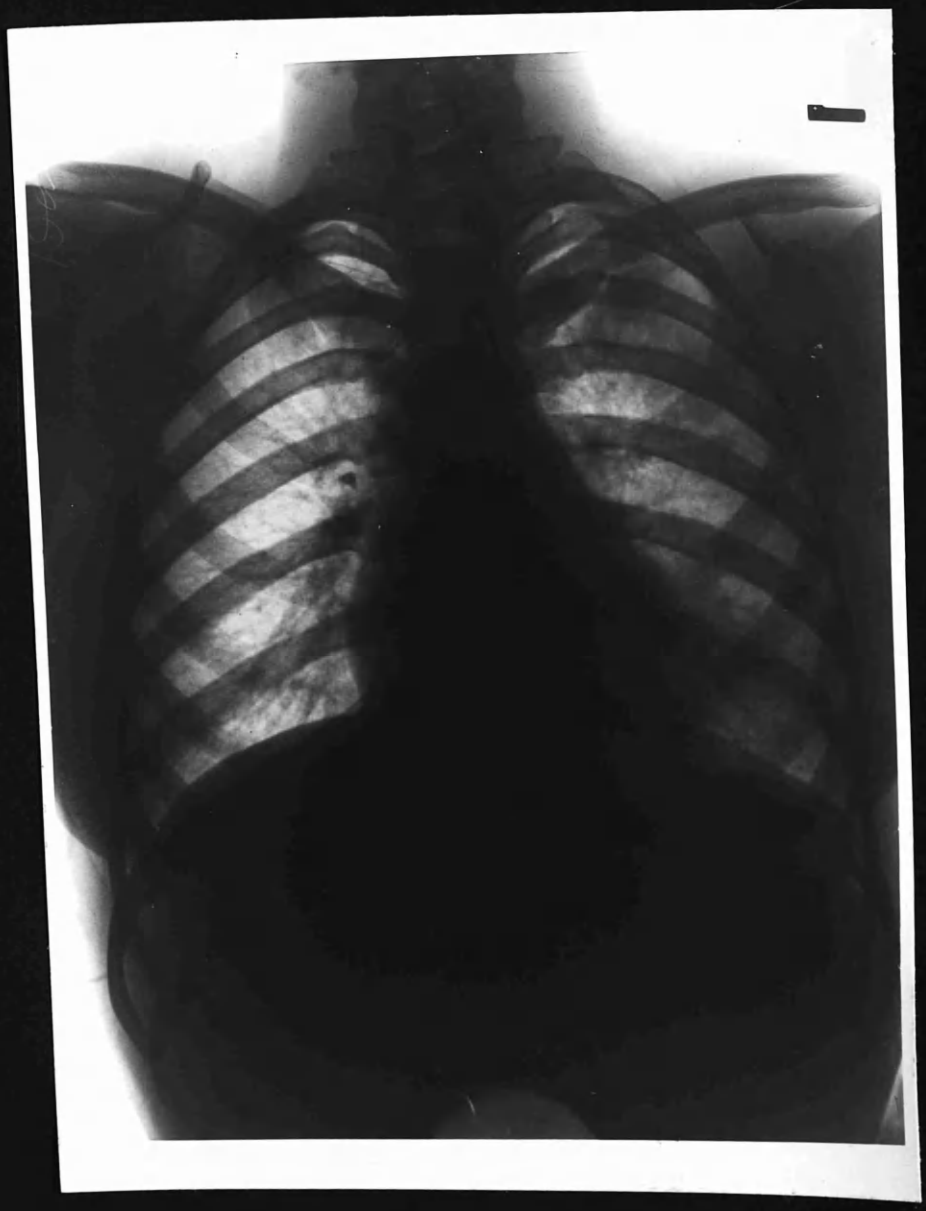
CASE 25
X-RAY 1.
27-11-30.

TYPICAL EARLY INFILTRATION OF THE RIGHT LOWER LOBE. ACUTE TYPE OF DISEASE BUT RESPONDING WELL TO IMMEDIATE ARTIFICIAL PNEUMOTHORAX TREATMENT

CASE 25
X RAY 2
8-12-31

ARTIFICIAL PNEUMOTHORAX TREATMENT OF BASAL LESION: NOTE THE SELECTIVE COLLAPSE

CASE 26
X-RAY 1.
1-2-32.



EXTENSIVE INFILTRATION OF LEFT LUNG
THREE WEEKS AFTER FEBRILE ILLNESS
DIAGNOSED AS "INFLUENZA"

CASE 26
X-RAY 2
24-5-32

ARTIFICIAL PNEUMOTHORAX TREATMENT.
THE BASE IS ADHERENT BUT THE
RESULT IS SATISFACTORY