cautery is passed in, and directed to the base of the adhesion, which is coagulated and then cut through. This procedure has two serious complications: (1) Infection of the pneumothorax cavity from rupture of the burnt lung stump. (2) Hæmorrhage from an intercostal artery. In some forty-five cases that Dr. Scott Pinchin and I have done we have not met this latter complication. The first complication we have seen.

In the majority of cases where it is possible to deal with the adhesions in this manner, after the procedure the lung collapses, the cavity closes, and the sputum becomes negative. By means of cauterization of adhesions such cases are being saved from the severe and mutilating operation of thoracoplasty.

For cases of unilateral disease in which, owing to a very adherent pleura, it is impossible to induce a pneumothorax, and for those cases where a pneumothorax has been rendered incomplete by the presence of adhesions which are not amenable to division by the thoracoscope, there are other methods of collapse therapy available.

PHRENIC AVULSION.

In this procedure a considerable length of the phrenic nerve on the diseased side is avulsed, thus permanently paralysing the diaphragm on that side, and allowing it to rise and be forced up by the intra-abdominal pressure, thus compressing the lung, and also assisting in giving it rest.

This procedure is not only used in the two types of cases previously mentioned, but is often done as the method of choice when the tubercular lesion is situated at the base of the lung.

EXTRA-PLEURAL PNEUMOLYSIS.

In this operation the parietal pleura is stripped from the ribs over the diseased portion of the lung, and then some foreign material (such as paraffin or fat) is introduced into this cavity to keep the lung compressed. This measure is particularly useful

in old fibrotic apical cavities which cannot otherwise be collapsed.

THORACOPLASTY.

Thoracoplasty may be complete or incomplete; that is to say, varying portions of some or of all the ribs on the affected side are removed, thus allowing the chest wall to fall in and collapse the lung, and compress it against the vertebral column and mediastinum. This operation is a severe one, and therefore one often hesitates to advise the patient to undergo it, but if the disease is unilateral, and there is a cavity which cannot be collapsed by other more conservative measures, I am convinced that it is one's duty to advise this operation provided the patient's general condition is sufficiently good, and that the patient is offering a reasonable resistance to the disease.

Although I have dealt with collapse therapy at some length, it must not be thought that it will be the final word in the treatment of pulmonary tuberculosis. One looks forward to the day when serotherapy or chemotherapy will enable us to deal successfully with the disease, yet those of us who are especially interested in this disease are convinced that, at present, it is our most effective weapon to deal with the local lesion in the lung while the patient is gaining his resistance to overcome the ravages of the tubercle bacillus.

THE ANTAGONISM OF HYPERTHYROIDISM AND PULMONARY TUBERCULOSIS.

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It is interesting and not sufficiently recognized that two wasting diseases like hyperthyroidism and pulmonary tuberculosis,

which on first thoughts appear to bear no relation to each other, not infrequently present real problems of difficulty, even to the expert clinician, from the point of view of differential diagnosis. This applies more particularly to the early stages of these respective diseases, especially where there is an added naso-pharyngeal infection, by no means infrequent. Many cases may require the most careful observation before a correct diagnosis can be made. So closely allied may be the symptoms that it is by no means surprising that these two conditions are often confused with one another. What is of even greater interest is the frequency with which they are stated to be co-existent because of the presence of symptoms and even suspicious physical signs which would fit in with the existence of both pulmonary tuberculosis and hyperthyroidism. One has always been under the impression that a combination of exophthalmic goitre and pulmonary tuberculosis was extremely rare, and although the literature on the subject is scanty, an exhaustive search, kindly made for me by the Librarian of the Royal Society of Medicine, on the incidence of these two conditions in combination, would appear to confirm this suspicion, for no reported co-existence of these two diseases has been found. Moreover, investigation into 2,500 consecutive post-mortem findings, kindly made for me by Dr. W. Susman, pathologist to the Manchester Royal Infirmary, shows that in no one of sixteen cases of exophthalmic goitre was evidence of pulmonary tuberculosis found. On inquiry from several physicians, whose knowledge of both diseases is considerable, I have elicited a similar clinical experience.

Dr. Fishberg states that the hyperactivity of the thyroid is incompatible with progressive phthisis, within certain limits. Dr. Emile Sergent, of Paris, says that it is quite common to see cases of Graves' disease treated as pulmonary tuberculosis. He points out that pyrexia, quick pulse, hypotension, sweating, progressive loss of weight,

cough and dyspnoea, and later crises of diarrhoea, are common to both diseases. The pulse-rate in hyperthyroidism is persistently rapid, whilst in tuberculosis it may be raised up to 100, or more, but responds to rest.

The difference in blood-pressure in hyperthyroidism and pulmonary tuberculosis is valuable from a diagnostic point of view. In tuberculosis, the blood-pressure is generally distinctly lower than the patient's normal pressure before the onset of the disease. The pulse is of small volume with a small cardiac output, and the pulse-pressure is correspondingly low. In exophthalmic goitre, there is, with the increased metabolism of this condition, a large cardiac output with a correspondingly high pulse-pressure. The systolic pressure is increased whilst the diastolic is decreased and the pulse-pressure is high, usually above 60. The thyrotoxic heart is unduly excitable and overactive, whilst in tuberculosis the opposite condition often exists.

A history of emotional strain, the fact that despite a good appetite with much intake of food there may be considerable loss of weight together with the clinical findings of the pulse—blood-pressure, eye signs, tremor, &c.—should assist in the diagnosis. Certain people, especially women, have been aptly described by Dr. Stewart R. Roberts of America as having the "thyroid constitution"—their eyes are bright, their reaction is emotional, the pulse normally fast, the mind acts quickly and every movement is unduly animated.

With regard to the cough in subjects of Graves' disease, it is interesting to observe that Pierre Marie first described it as being dry, exhausting and very tenacious in character. To use his own words "*ils toussent d'une petite toux sèche, très fatigant et très ténace.*" Personally, I am of the opinion that exophthalmic goitre and pulmonary tuberculosis (certainly active pulmonary tuberculosis) are antagonistic, at least as much so as is alleged in cases of

pulmonary tuberculosis and mitral stenosis. It is only after careful routine systematic examination (clinical, radiological and bacteriological), under close medical supervision, that certain of the more difficult cases are diagnosed.

Case 1.—A patient, H. D., aged 50, came complaining of cough of six weeks duration with about 1 drm. of sputum per day and progressive loss of weight—he had in fact lost two stone in eighteen months. He was regarded as a case of early phthisis. On examination, his tonsils were enlarged and septic and his fauces were markedly injected. They were definite physical signs of apical catarrh, but there was no evidence clinically of any infiltration of the lungs; this was confirmed by an X-ray examination of the chest. He had slight exophthalmos with the usual signs and admitted that he was very nervous; his pulse-rate averaged 130; his sputum was "T.B. negative" on several occasions. The response to treatment for hyperthyroidism was most satisfactory.

Case 2.—A woman, aged 39, a contact of a case of active pulmonary tuberculosis, was sent by her doctor as a suspected case of phthisis. On investigation, she was a case of Graves' disease, for there was a marked goitre with obvious exophthalmos and the other signs associated with this condition. Moreover, she had a partial thyroidectomy performed in 1922. Prior to the operation, she stated she had lost over five stone in weight in a very short period, but since the operation she had reached her normal weight and had felt very much better.

In 1923, she was apparently suspected of pulmonary tuberculosis, for she had been sent to a tuberculosis department for investigation, as she began to lose a little weight again and had a dry, hacking cough with occasional blood-stained expectoration. Sputum tests and clinical and radiological examinations of her lungs revealed nothing abnormal and she was sent to bed for two months. She ceased attendance at the tuberculosis department until 1925, when she again attended complaining of cough

with blood-stained expectoration, after an attack of influenza.

She had then gained weight and no physical signs were repeated apart from those of a mild bronchitis. In February of 1930, after she had had a severe cold, she was sent to the chest clinic because of small hæmoptysis, about 1 drm., but apart from this she had had a dry cough with only occasional expectoration. The physical signs in her chest suggested an apical catarrh. Sputum examinations for tubercle bacilli were repeatedly negative and X-ray examination by Dr. Stanley Melville showed no evidence of any tuberculous infiltration of the lung parenchyma.

Case 3.—A married woman, E. G., aged 40, was sent to me as a case of pulmonary tuberculosis. She had all the classical signs of exophthalmic goitre. When I first saw her early in 1929 she gave a history of general malaise, lassitude, marked dyspnoea and a dry cough of four years duration. Periodically she has had some expectoration which has, on occasions, been heavily blood-stained. She had lost 18 lb. in two months and had had profuse night sweats. On examination of the chest there was some impairment of percussion at her left apex, the breath sounds were vesicular but there were definite crepitations which did not persist on coughing.

An X-ray examination of the chest by Dr. Mather Cordiner showed a diminution of translucency at the left apex but no definite evidence of infiltration. Repeated sputum examinations for tubercle bacilli have been persistently negative.

Radical treatment for the exophthalmic goitre has freed the patient from most of her symptoms and there are now no physical signs in the chest and the X-ray examination shows no evidence of infiltration although the diminution in translucency remains.

Nevertheless, one is really not justified in regarding the case as anything but one of exophthalmic goitre.

To sum up we may say that (1) the differential diagnosis between certain cases

of hyperthyroidism and pulmonary tuberculosis may present, without a period of observation, problems of difficulty even to an expert clinician: (2) hyperthyroidism and pulmonary tuberculosis tend to be antagonistic. At any rate they do not tend to occur in the same patient.

Why this should be so it is difficult to explain. It opens up the whole problem of the ductless glands in their relation to immunity. Whether hyperactivity of the thyroid renders one immune to phthisis is a problem of considerable interest. Clinical experience tends in that direction.

POST-GRADUATE NEWS.

THE following Special Courses will be held during November:—

Royal Waterloo Hospital, Waterloo Road, S.E.1.

A Course in Medicine, Surgery, and Gynæcology will be given from November 2 to 21, occupying the afternoons and some mornings, with demonstrations and lectures. Fee £3 3s.

Gordon Hospital, Vauxhall Bridge Road, S.W.1.

A Course in Proctology occupying each afternoon for one week, November 2 to 6 inclusive, will be given at this Hospital. Fee £1 1s.

West End Hospital for Nervous Diseases, Welbeck Street, W.

A late afternoon Course of Lecture-Demonstrations in Neurology will be given from November 2 to November 28. The daily clinics will begin at 5 p.m. Fee £2 2s. As this Course will only be held if a minimum of ten post-graduates enter, it is essential that early application should be made to avoid cancellation of the Course.

Royal Westminster Ophthalmic Hospital, Broad Street, W.C.

An afternoon Course in Ophthalmology will be held from November 9 to 28. The Course will include special clinical instruction and operations every afternoon from 2.30 p.m. to 4.30 p.m. Fee £4 4s.

City of London Hospital, Victoria Park, E.

A Course in Diseases of the Chest will be held from November 16 to November 28. The Course will occupy the whole of each day with demonstrations and lectures. Fee £2 2s.

London Lock Hospital, 91, Dean Street, W.1.

A Course in Venereal Disease will be held from November 16 to December 12 at the the London Lock Hospital. Clinics will take place every afternoon. Fee £2 2s.

St. Mark's Hospital, City Road, E.C.

A Course in Proctology will take place from November 23 to November 28, occupying the whole of each day. Fee £3 3s.

Infants Hospital, Vincent Square, S.W.1

A Course in Diseases of Infants will take place from November 30 to December 12. The clinics will be held every afternoon from 2 o'clock onwards, and special visits will also be arranged. Fee £3 3s.

Hospital for Diseases of the Skin, Blackfriars, S.E.1.

A Course in Dermatology will take place from November 30 to December 12, consisting of clinical instruction every afternoon. Fee £1 1s.

Children's Heart Hospital, West Wickham, Kent.

Lecture-demonstrations on "Rheumatic Infection and Heart Disease in Children" will be given on the first Saturday in each month from 10.30 a.m. to 12 noon, by Dr. Bernard Schlesinger. Fee 7s. 6d. per demonstration or £2 for six successive