Complications during treatment are not uncommon. The chief being

(1) Albuminuria.

(2) Erethemata.

(3) Abdominal-diarrhea and pain.

(4) Continued loss of weight.

If any of these appear treatment must be stopped and not recommenced until they have completely disappeared. It is therefore necessary to test the urine carefully before treatment and for three or four days after each dose.

The results of treatment are variable. They are not so good as those obtained from A.P.T. Some cases do not respond at all; others do remarkably well. The main improvement being

(1) Sputum becomes negative.

(2) Clearing of the X-ray film. One type of case which is pre-eminently suitable for Sanocrysin is the case that has been, or is being, treated by collapse therapy and develops a new lesion in the good lung.

Sanocrysin will be superseded by something more benzficial, but at present it has a distinct and useful place in the pharmacopœ ia of the phthisiologist.

Another drug I wish to speak about is iodine. This can be used to advantage in the bronchitic case giving the tincture in milk or water. In other cases the intensive treatment sometimes gives good results. This consists of giving increasing doses of Potassium Iodide starting with gr. x up to gr. xxx followed by chlorine water in lemonade. Nascent iodine is liberated and tends to clear up the

Nascent iodine is liberated and tends to clear up the sputum. *Creosote* has been used for ages, and is excellent in the case with profuse sputum. Unfortunately it is a gastric irritant and is likely to cause dyspepsia. I must say a word about cod liver oil. This old-time remedy is good if used with discretion. The case that has

I must say a word about cod liver oil. This old-time remedy is good if used with discretion. The case that has a good healthy appetite and is doing well does not need the oil, but the debilitated case often obtains benefit from it. The great danger is to give too much of it. In children, I think, recent work has shown that 75 per cent. is excreted unchanged, so that only a small quantity is assimilated. It has one great drawback that it is likely to cause dyspepsia. The palatable forms must be looked upon with suspicion as the oil has passed through so many processes that it is probable that its essential properties have been destroyed. A combination of oil and calcium salts is very useful and desirable as the tuberculous patient is deficient in calcium, and calcium can be assimilated with the aid of vitamins and parathyroid extract.

Mentioning vitamins causes me to remind you that although dozens of vitamin preparations are on the market there are vast quantities in fresh fruit, oils, and raw foods which are much cheaper, and may be more reliable.

So much for the drugs.

Let us now consider Tuberculin Treatment.

Tuberculin has not played, so far, a great part in the treatment of Pulmonary cases. Ever since Koch discovered the tubercle bacillus attempts have been made to produce a vaccine of the bacillus that will be efficient, but unfortunately the T.B. will not allow a true vaccine to be made. The Tuberculins on the market fall roughly into three groups

1) The Bacillary Emulsions (B.E.).

(2) The Filtrates (O.T.).

(3) The defatted Èmulsions.

There are many types of these classes. Some are absolutely worthless; others are of considerable value in treating glandular or caseous lesions. The important point in treatment is to remember that diluted Tuberculin will not keep more than two or three weeks.

When given, the initial doses are very small and are increased slowly at intervals of five or seven days.

0.2cc. of 1000000 dilution is a useful initial dose : that is .000002 mg.

I do not think Tuberculin is of any use in the case with caseous or caseofibrous lesions, but I have had some extremely good results with early cases without any sign of cavitation, and in the cases where there is an early fibroid development, and cases in which the lymphatics are mostly involved.

If the dosage is correct, and increased gradually there should be no complication or undesirable symptoms.

Vaccines made from various organisms found in the sputum other than the tubercle bacillus are of use in the early bronchitic type and sometimes prevent the slight periodic relapses to which some cases are prone. In fact, cases which develop a few days temperature at intervals are the ones most suitable for vaccine treatment.

Of serum treatment there is little to say as none so far has been produced that it is of definite use.

Spahlinger comes to the fore more through the daily Press than the medical journals, and considering the number of investigations made, by highly qualified people, on Spahlinger's work, we should certainly be using the serum in England if it had any therapeutic value. There seems no definite evidence that the serum has any beneficial effect in cases of Pulmonary Tuberculosis.

We have now surveyed the whole field of modern treatment of Pulmonary Tuberculosis, but I should like to conclude with a few remarks on the treatment of the complications most frequently encountered. These are:—

- (I) Pleurisy {Dry. With effusion.
- (2) Spontaneous Pneumothorax.
- (3) Laryngitis.
- (4) Peritonitis and Enteritis.

*Pleurisy* occurs in every case of Pulmonary Tuberculosis to a greater or less degree.

The treatment resolves itself to combating the constitutional symptoms and relieving the pain. The patient must be put to bed, and kept as quiet as possible. The painful side may be strapped tightly, the strapping being put on during expiration and to overlap the mid line, both back and front. Instead of strapping in mild cases painting with iodine is sometimes sufficient. In the severe cases the best way to relieve the pain is to induce temporary A.P. (best done with oxygen). This separates the inflamed surfaces of the pleura and so relieves the pain immediately. It also helps to prevent adhesions, so that if the lung lesion is progressive a course of A.P. treatment can be given without difficulty. The result in a painful pleurisy is dramatic, the pain disappearing immediately. Salicylates are useful, particularly in the form of aspirin. Too early return to work should be avoided and tonics are often necessary during convalescence. Frequent examination is necessary to determine the condition of the lung lesion.

Pleurisy with effusion is not so common a complication. The effusion generally follows a sharp attack of pain, and the temperature keeps at a higher level for a longer period than in dry pleurisy.

There are two methods of treatment, either to leave the fluid and let it be absorbed, a process which is often beneficial to the patient, or to remove the fluid. Now, the fluid is nature's method of separating the pleural surfaces, and also of keeping the lung collapsed and at rest. We should therefore assist in this and replace the fluid by air so that the position of the lung is not disturbed.

It is bad treatment to take away the fluid, and let the surfaces of the pleura come together immediately, and the lung to expand suddenly. Adhesions will form, and maybe the lung lesion will become active.

158



