8 cases diagnosed as tuberculous, 5 gave a positive and 3 gave a negative result. The positive results estimated upon the total number of cases examined amounted to nearly 36 per cent. If the cases diagnosed as tuberculous are eliminated, it will be seen that 5 of the 20 non-tuberculous cases contained virulent tubercle bacilli in the mesenteric glands, and that in these cases the positive results were equal to 25 per cent.

As regards the other glands of the body examined, the following results were obtained: The bronchial glands gave a positive result in 1 out of 4 cases examined—namely, a case of general tuberculosis. The tubercle bacillus was found in the mesenteric glands, and likewise in the cervical glands of the same case.

As regards the 10 positive results obtained by inoculation experiments, the mesenteric glands were also examined microscopically in nine instances. Of the latter, in seven instances whilst the animal experiment was positive, the microscopic examination was negative.

TABLE.

No.	Sex.	Age.	Post-mortem Report.	Microscopical Examination of Glands.	Result of Inoculation.
1	F.	14 mths.	Old empyema; no obvious tuberculosis	Negative	Negative.
2	F.	4 yrs.	Tuberculous meningitis	Negative	Positive.
3	F.	7 mths.	Empyema; meningitis; gut normal	Negative	Negative.
4	M.	7 mths.	Acute diarrhoea; lobar pneumonia; no intestinal lesions	Negative	Negative.
5	F.	6 mths.	Pertussis; broncho-pneumonia	Negative	Positive.
6	M.	—	Broncho-pneumonia	Positive	Positive.
7	F.	9 mths.	Tuberculous meningitis; scattered grey tubercles in lung; caseous bronchial glands; no caseous glands round abdominal aorta	Negative	Positive.
8	M.	2½ yrs.	Multiple skin abscesses yielding staphylococcus pyogenes aureus only; thrombosis of cerebral sinuses	Positive	Positive.
9	M.	1 yr.	Broncho-pneumonia; no intestinal lesions	Negative	Negative.
10	—	1 yr.	Died suddenly; no intestinal lesions; nil found post mortem	Negative	Negative.
11	M.	4½ yrs.	Acute miliary tuberculosis	Negative	Positive.
12	M.	1 yr.	Tuberculous broncho-pneumonia	Negative	Negative.
13	M.	1½ yrs.	Measles; broncho-pneumonia	Negative	Negative.
14	M.	1 yr.	Broncho-pneumonia; no tuberculous lesions	Negative	Negative.
15	M.	4 mths.	Broncho-pneumonia; no tuberculous lesions	Negative	Negative.
16	M.	2 yrs.	General tuberculosis; tuberculous meningitis	Negative	Negative.
17	M.	1½ yrs.	Broncho-pneumonia; no tuberculous lesions	Negative	Negative.
18	M.	15 dys.	Wasting; jaundice; no tuberculous lesions discoverable	—	Negative.
19	F.	6½ yrs.	General tuberculosis	—	—
			Mesenteric glands	Negative	Positive.
			Bronchial glands	Positive	Positive.
			Left cervical glands	Positive	Positive.
			Right cervical glands	Negative	Positive.
20	—	1 yr.	Purulent cerebral meningitis	—	—
			Enlarged mesenteric glands	—	Negative.
			Gland from bifurcation of trachea	—	Negative.
21	M.	5 yrs.	General tuberculosis	Negative	Positive.
22	F.	Stillborn	—	Negative	Positive.
23	—	—	Septic meningitis	—	—
			Mesenteric glands	—	Negative.
			Right bronchial glands	—	Negative.
			Left bronchial glands	—	Negative.
24	F.	8 yrs.	Mitral and aortic disease	—	—
			Adherent pericardium	—	—
			Mesenteric glands	—	Positive.
			Right bronchial glands	—	Negative.
			Left bronchial glands	—	Negative.
25	M.	5 mths.	Intussusception	—	—
			Peritonitis	—	Negative.
26	F.	1½ yrs.	Empyema; septic meningitis	—	Negative.
27	M.	2 yrs.	Meningitis	—	Negative.
28	M.	4 yrs.	General tuberculosis	—	Negative.

The experiments have shown that in the non-tuberculous cases virulent tubercle bacilli were present to the extent of 25 per cent. The tubercle bacilli, it appears from these experiments, are present much more frequently in the mesenteric glands than ordinary *post-mortem* examination would lead one to suppose.

One point of interest to which we should like to draw attention was the detection by us of the tubercle bacillus in the mesenteric glands of a stillborn child.

As regards the other glandular tissues examined—that is

tonsils and adenoids—the material was obtained as the result of operations for the removal of the enlarged organs, and our thanks are due to Dr. Lambert Lack and the resident medical officer at the Throat Hospital, Golden Square, for the material. The ages of the patients varied from 2 to 21 years, all but 2 being under 17, and the majority under 11. The procedure adopted was the same as in the case of the mesenteric glands. Only those cases were counted in which the inoculated animals lived from one to two months. We were enabled to obtain results from 44 cases of adenoids and 34 cases of tonsils. As these tissues were diseased, it is a justifiable presumption that their power of resistance to the invasion of organisms was lowered, and that if virulent tubercle bacilli were not infrequently present in the throat, they would be found more particularly in situations such as those examined. The results, however, obtained have been entirely negative. In not a single case were there any naked-eye signs of tubercle, nor were tubercle bacilli found on microscopical examination of the organs of the experimental animals. We may therefore conclude that there are not usually present in the tonsils and adenoids tubercle bacilli capable of conveying the disease to that most susceptible animal, the guinea-pig. The virulent organisms found to be present in the tonsils and adenoids examined, belonged almost entirely to the group of the micrococci.

NOTE ON ANTIHAEMOLYTIC (HAEMOSOLIC) SERUM.

BY

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In a previous paper we showed that the serum of an animal (rabbit) which had received several injections of human urine became haemolytic for human red corpuscles. We next endeavoured to ascertain whether injections of bile would also produce haemolytic serum. For obvious reasons, we did not use human bile, but sterile ox bile, and tested the serum of the injected rabbit on the red corpuscles of the ox. All the experiments were conducted under conditions of absolute sterility.

Preliminary experiments confirmed the observation of others, namely, that the bile of the ox dissolved not only the red corpuscles of the ox, but those of other animals also—for example, the corpuscles of man, guinea-pig, rabbit, etc.—the haemolytic power, however, varying in different individuals. Similarly, the bile of rabbits is haemolytic for animals of other species as well as for the rabbit.

We now found that the serum of a normal animal possessed antihaemolytic properties against the bile of animals of the same species, and sometimes against the bile of other species. The washed red corpuscles of the ox, for instance, suspended in sterile salt solution are immediately dissolved on the addition of a sufficient quantity of ox bile, but are not dissolved if a certain quantity of ox serum be added at the same time. Similarly sheep's bile does not dissolve the red corpuscles of sheep suspended in sheep serum or in ox serum. Rabbit's serum has a very slight antihaemolytic effect against rabbit bile but none against ox bile.

The action produced by the same serum and bile differs according to the nature of the red corpuscles added to the mixture. Thus, a given mixture of ox bile and ox serum leaves the red corpuscles of the ox intact, whereas it dissolves the red corpuscles of the sheep and rabbit.

The subcutaneous injection of sterile ox bile (1 c.cm.) into rabbits is followed by local and general symptoms. The local symptoms often culminate in a more or less extensive patch of necrosis at the point of inoculation. The general symptoms are (1) a slight amount of fever and (2) temporary diminution of the red and white corpuscles of the blood. Should the quantity of injected bile be so large as to cause death, the *ante-mortem* temperature may fall several degrees below normal.

Intravenous injections of 1 or 2 c.cm. of sterile bile are not fatal, provided the bile be diluted with salt solution. The general symptoms produced by such intravenous injections resemble those following the subcutaneous introduction of bile.

The serum of a rabbit (weighing from 1 kg. 250 to 1 kg. 750)

injected intravenously or subcutaneously with ox bile (1 to 2 c.cm. at a time) does not as a rule haemolyse the red corpuscles of the rabbit or the ox. It differs therefore from the serum of animals which had been injected with urine.

If now a given quantity of bile be mixed with a given quantity of this serum, the appearance of the haemolytic properties of bile is delayed considerably. Haemolysis may take five or more hours to show itself, whereas in the control tube it occurs immediately. If the quantity of added serum be increased further, the haemolytic properties of bile may not show themselves at all; the red corpuscles sinking unchanged to the bottom of the tube. To such a serum we give the name of haemosozic serum, and the name of haemosozin to the substance protecting the red corpuscles.

If, to a quantity of bile exactly neutralized by haemosozic serum more bile be added, haemolysis again takes place even if the quantity of serum be increased correspondingly. It is probable therefore that the serum of animals injected with bile contains several new and complex bodies.

In some cases the serum of rabbits injected with bile is not haemosozic but haemolytic. As might be expected a mixture of bile and haemolytic serum is haemolytic, but, occasionally, the mixture of haemolytic serum and haemolytic bile is less haemolytic in a concentrated than in a dilute form.

We consider these facts to be interesting enough to be put on record, though we offer no explanation for them at present.

A CASE OF ACROMEGALY.

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Mrs. L., aged 38, came to the Sheffield Royal Infirmary on September 19th, 1902, complaining of dimness of vision and pain over the eyes and on the top of the head. The dimness of sight was first noticed a month or more previously but had rapidly become worse. The pain was situated just above each eye and on the top of the head, being worst about the situation of the coronal suture. This pain had been present more or less since an attack of influenza five years before, but it had recently become worse and had been nearly continuous for the past six weeks. Vision in the right eye was found to be $\frac{5}{60}$; in the left, $\frac{3}{60}$; the pupils were somewhat dilated, the left more so than the right; right 7mm., left 8mm., in the shade; and right 4mm., left 5mm., in the light. The optic papillae were somewhat pale, but the ophthalmoscopic appearances may be regarded as unimportant. There was bi-temporal hemianopsia. The perimeter charts, Fig. 1 and Fig. 2, show marked contraction also in the remaining half of the field, especially in the left eye. The appearance of the patient was characteristic of acromegaly and the following notes of her condition were taken.

Family History.—No case of the disease in the family or among relations. Father alive, and has enjoyed good health; mother, found dead in her bed; one brother, healthy.

History.—The patient states she has never been well since her last confinement nine years ago. Since that time she has always felt tired and languid, being unable to attend to her household duties as well as formerly. She also suffered from amenorrhoea. Five years ago she noticed, after an attack of influenza, that her sight was becoming impaired. At that time, also, her ring became too tight, and her boots and shoes too small. She also suffered from severe headache over the eyes and on the top of her head; her lower lip and nose gradually increased in size, but the dimness of vision

gradually improved. A year since her sight again became worse, and she came to the infirmary, as already stated, on September 19th, 1902, for this defect.

Fig. 1.—Photograph of patient at the age of 20.

Past Illnesses.—Anaemia for the past two years. Influenza five years ago. No injury to the head. The patient has had two children, the eldest being 12 years old, the younger 9. No miscarriages. Both children are healthy and normal in appearance. The patient is a fairly big woman, height about 5 ft. 9 in.

Fig. 2.—Photograph showing face and hands.

On walking, her head is pushed forward and her back bent. Her face is long and oval, with a long and prominent nose; markedly thickened lower lip and pointed chin which stands out to some slight extent, but is not prognathous. The ears are not enlarged. Marked indentation over the post-fontanelle. Hands, these conform to Marie's "type enlarged." Feet, enlarged even more than the hands. The legs swell, especially at night, the left more than the right. At first she wore