on the theory that the locally hypertrophied tissues had developed a special sensitiveness to the growth hormone. H. M. Evans has shown that the response of the dachshund and of the sheep-dog to injections of the pituitary growth hormone is entirely different. Indeed, if such things were not so, it would be difficult to account for structural plasticity in the hands of the breeder.

It must have fallen to the lot of everyone who has treated cases of pituitary obesity to find some patients entirely refractory to treatment identical with that which has been successful with others. Yet clinically no difference could be detected between the two groups. I know that there are authorities who maintain that obesity can always be reduced by diet alone; I do not know if they would add that the patient can also be kept in good health. I believe that retention of water is one factor in preventing reduction of weight, and I sometimes speculate on the possibility of putting on weight by assimilation of oxygen: how otherwise does the hibernating animal become heavier? But apart from such controversial matters, it seems clear that cases of obesity of admittedly endocrine origin respond so differently that some difference of receptivity is probable.

In concluding this necessarily summary introduction to the discussion may I express the hope that research on the synthetic hormones may effect two things: first, the discovery of simple basal groups which can produce the biological effect and yet escape disintegration by the digestive juices; and, secondly, reduce materially the cost of production. At present the cost of many is prohibitive except for the very rich and for the hospital class.

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L. Rizzi (*Riforma med.*, 1938, **54**, 1222), who records an illustrative case, states that in most of the cases of pituitary haemorrhages on record there are minute punctate haemorrhages indicating toxic degeneration, or merely sudden increase of pressure, corresponding to the small haemorrhages observed in all the other organs. Large pituitary haemorrhages are very rare, and their origin is obscure. Almost all cases of this kind have shown old haemorrhages, which had given rise to more or less definite pituitary syndromes. The present case was that of a woman, aged 49, the subject of diffuse glomerular nephritis with hypertension, who six days before death developed severe cerebral symptoms due to uraemia. In addition to well-marked arteriosclerosis and renal sclerosis the necropsy showed a large haemorrhagic cyst in the hypophysis. The cause of death in this case was the compression of the mid-brain or the general endocranial hypertension produced by the haemorrhage.

TREATMENT OF TUBERCULOSIS IN GUINEA-PIGS WITH SULPHANILAMIDE

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The experiments described in this paper were carried out in an attempt to repeat the work of Rich and Follis (1938), who obtained considerable inhibition of the development of tuberculous lesions in guinea-pigs infected with a human strain.

Technique

Infection of Guinea-pigs.—Suspensions of actively growing (six-day) cultures from Petraghani's medium were injected subcutaneously into the right leg of guinea-pigs which averaged 400 grammes in weight. Two virulent strains were used, as follows:

Human strain, R. 2: Twenty guinea-pigs received 0.05 mg. of culture and twenty 0.5 mg.

Bovine strain, BV. 28: Twenty guinea-pigs received 0.01 mg. and twenty 0.1 mg.

With the aid of an opacity standard tube we estimated that 1 mg. of culture contained approximately 2,000 million tubercle bacilli.

Treatment with Sulphanilamide.—Half the animals in each group were kept as controls and half were given sulphanilamide (50 per cent. suspension in 5 per cent. gum arabic) four times daily by mouth. A total of 500 mg. (100 mg. at 9 a.m., 1.30 p.m., and 5 p.m., and 200 mg. at 10 p.m.) was given daily for five days; these doses were halved from the sixth to the forty-second day, when all survivors in both treated and control groups were killed. Unlike Rich and Follis, who deposited the drug in the cheek pouch, we induced the swallowing reflex by ejecting the suspension from a syringe on to the back of the tongue and pharynx. Almost all the material thus administered was retained.

Toxic Effects of Sulphanilamide

The treatment we employed for the first five days of the experiment—namely, 500 mg. daily—was regarded as the optimum therapeutic dosage by Rich and Follis, who noted evidence of overdosage, however, in certain guinea-pigs which had been treated for three to six weeks. We reduced the dosage to 250 mg. after the fifth day, because some guinea-pigs undergoing treatment soon became ill with characteristic toxic signs—loss of weight and temporary paralysis.

The average weights of the treated and control groups of guinea-pigs were approximately the same (400 grammes) at the beginning of the experiment, but the treated animals lost an average of 50 grammes during the first week of treatment, whereas the weights of the untreated controls remained stationary. When dosage was reduced towards the end of the first week the general condition of the treated animals improved, although they remained lighter than the untreated controls. Unfortunately, in this preliminary experiment we did not continue to weigh the animals at weekly intervals.

Therapeutic Results

Sulphanilamide did not completely arrest the development of generalized tuberculosis. The lesions of the treated animals that died during the fourth or fifth week of the experiment appeared to be less than those of controls. All the survivors were killed on the forty-second day, when the differences between the groups were as follows:

HUMAN STRAIN, R. 2

The spleens of the control animals were very friable, but those of the treated animals were of almost normal texture. Although macroscopic tuberculous foci were present in the spleens of all the guinea-pigs, they were fewer, much smaller, and showed less tendency to coalesce in the treated group. Spleens from nine controls and nine treated animals were sectioned by Dr. C. L. Oakley, who reported that "tubercles were present in all, but were consistently smaller and showed less tendency to coalesce in the treated animals than in the controls. In many spleens from control animals no normal splenic tissue could be found; in most of the treated animals each tubercle was surrounded by a broad zone of more or less normal spleen. In no instance was there the slightest sign of healing."

In the third series of experiments of Rich and Follis no animals in the fifth week and only one of six animals in the sixth week in the treated group showed macroscopic lesions in the spleen, although all except one showed scattered microscopic tubercles. This is a better result than we were able to obtain in our preliminary experiment.

The spleens of our treated animals (average area of anterior surfaces, 460 sq. mm.) were less enlarged than those of the untreated controls (average, 822 sq. mm.), but this difference was probably partly due to the fall in weight of those treated. Our colleague, Dr. J. W. Trevan, kindly examined the data statistically, and concluded that the size of the spleen did not provide any important evidence as to the intensity of infection.

Many tuberculous foci were present in the lungs of both our treated and untreated animals, but they were somewhat fewer and more discrete in the former group, and had less associated basal consolidation. The inguinal and tracheo-bronchial lymphatic glands were much smaller and not so caseous in treated guinea-pigs.

The livers of many animals showed macroscopic lesions, and the variation in the extent of the infection in the treated and control groups was slight. There were no significant differences in the amounts of pus in the local lesions at the site of inoculation.

BOVINE STRAIN, BV. 28

Treatment had possibly a slight inhibitory effect in guinea-pigs—less than was obtained in the experiment with the less virulent human strain, R. 2.

A companion experiment in rabbits showed no evidence of inhibition of tuberculosis with treatment. Eight control and eight treated animals were used, 3,750 mg. of the drug being administered daily to each treated rabbit in divided dosage.

Summary and Conclusions

Sulphanilamide appears to produce some degree of inhibition of an infection of guinea-pigs with a human strain of the tubercle bacillus. Our results are less striking than those of Rich and Follis—possibly due to a difference in strain.

The drug had very little influence on the course of infection in guinea-pigs and none in rabbits when a bovine strain was used.

We agree with Rich and Follis that it would be regrettable if any premature and unjustifiable conclusions were drawn regarding the treatment of tuberculosis. Further prolonged investigations with sulphanilamide and other

preparations are clearly necessary under carefully controlled conditions, special attention being paid to the toxicity of the drugs employed.

We are indebted to Dr. A. Stanley Griffith for the virulent bovine strain, BV. 28, and to Drs. J. W. Trevan and C. L. Oakley for their valuable help.

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THE SARCOIDOSIS OF BOECK

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(WITH SPECIAL PLATE)

The individual lesions of sarcoidosis have been recognized for many years, but, as patients would seek the advice of the dermatologist for one, the general physician for another, and the ophthalmologist for a third, the synthesis which showed them all to be expressions of the same morbid process was long delayed. However, the concept of a generalized disease with infiltrations of the skin in only a moiety of the cases is now widely admitted. Jonathan Hutchinson (1875) was the first to recognize the complaint, although priority is usually given to other workers—Besnier (1889), Tenneson (1892), and Boeck (1899). He "was accustomed . . . to designate the condition Mabey's malady"—from the name of his patient—"and although other and more scientific names might be devised, it is perhaps doubtful whether they would be more convenient" (1900). Longcope and Pierson (1937) quote nine other synonyms, and their list is by no means exhaustive. In the present paper the term "sarcoidosis of Boeck" is used, not for its intrinsic merit, which is little, but because it is familiar and bears no causative connotation.

The sarcoidosis of Boeck is a disease of long duration with a tendency to spontaneous remission; it is characterized by enlargement of lymph-nodes and spleen, by infiltrations of the skin, lungs, and bones of the fingers, by enlargement of parotid and lacrimal glands, and by iridocyclitis. One or more of these changes may be present in any individual case. It is my purpose to describe the clinical picture of the disease and to present very briefly eight new cases.

Sarcoidosis is not a rare disease, but it is difficult to give its frequency numerical expression as the patients are scattered through the special departments of a hospital. In over 300 histological examinations of lymph-nodes excised to establish a diagnosis of Hodgkin's disease, sarcoidosis was found once to every eleven cases of lymphadenoma; when to these are added the patients who attend the dermatologist for cutaneous sarcoid and some cases of "tuberculous" iridocyclitis from the ophthalmologist, it will be appreciated that its frequency demands for it a wider recognition. The eight cases reported here were collected in less than a year.

The Clinical Picture

The course of the disease is one of extreme chronicity unaccompanied in the majority by such symptoms of intoxication as pyrexia or emaciation, although there may be complaint of tiredness. The patient commonly comes