large scale; his book details various groups of occupations running into several thousands of people, and his 9.1 mean is, I believe, fair. Of course, there is variation between different occupational groups.

The next question is very important: these tests are not as precise as a haemoglobin estimation. If a patient's haemoglobin is 10 g. per cent. you have an accurate estimation, but a score of 12 on the Cornell Index is not in the same category; one should use these tests on groups rather than individuals. The last question was about 'the liars'. We did incorporate a 'lie scale' on the Eysenck Inventory but I was limited by time in discussing it. I have the data and can let you see it.

DR. K. D. MUIRDEN (*Melbourne*) I should like to follow up Dr. Wright's remark. We studied a group of 76 rheumatoid arthritics with the Eysenck Personality Inventory, and we found that the level of neuroticism was much higher than that of the published controls, being about 13, which is quite significant. At the same time our unit engaged in a similar study with patients with angina and a similar high level was found. We wondered whether in fact this level of neuroticism was not an acquired trait, secondary to the common factors in these two diseases, presumably pain and fear. I think this is different from what the psychologists say about the inventory?

DR. COOMES I quite agree with you. I think this is very fair comment on these tests.

DR. M. I. V. JAYSON (*Bath*) The relationship between mind and body is fascinating. It has been shown that psychological changes can effect the course of disease; for example it has been shown that psychologically you can suppress the tuberculin response in a Mantoux test, or you can suppress skin responses to substances to which the patient is allergic. Have you observed whether the mind affects the inflammatory process in rheumatoid arthritis?

DR. COOMES I can not answer that I'm afraid.

DR. P. J. L. HOLT (*London*) Can you completely rule out the use of drugs? Cortisone, admittedly in larger doses than you are using, can affect the mood, as can indomethacin and to a certain extent aspirin if taken in large enough doses.

DR. COOMES These Eysenck Inventories were filled in before the patients had had any treatment with cortisone, indomethacin, or aspirin.

Observations on Connective Tissue Tensile Strength in the Chick Embryo. By S. D. ORLOFF (*Rheumatology Laboratory, Brussels Medical School*).

In studying the effect of lathyrism in chick embryos, the following observations were made:

- (1) The tensile strength of connective tissue in normal embryos is predictable as a function of age and weight.
- (2) The total collagen content in normal embryos and their tensile strength run on parallel evolutions in time between Days 5 and 18 of incubation.
- (3) In lathyratic embryos collagen extractability and tensile strength are closely related and have a parallel evolution in time.

(4) The collagen extractability in lathyratic embryos is dosage dependent.

(5) Lathyrism pulls embryos down the time scale in respect of the tensile strength of connective tissue.

Discussion

DR. V. WRIGHT (*Leeds*) I am a little concerned about your method of finding the tensile strength. I wonder if you would not do better to use an impact load, because inevitably with your method you will obtain time-dependent effects. With an impact load you will have a better reflection of the true elastic properties, whereas with your method the visco-elastic properties of the material will presumably play a part. The alternative would be to plot a stress/strain curve which would give you a good deal of information. I was not clear how you calculated the tensile strength from the hydroxyproline content, and I wonder if you could please clarify that.

DR. ORLOFF To answer the first question, about time-dependence. We made studies using different flow rates and found that the weight of our basket was the most reliable parameter; we had much better correlation within our different experiments using the weight as a parameter.

To answer the second question, perhaps I did not make the point clearly enough: I meant that at the molecular level collagen extractability reflected alteration of the collagen molecule; on the other hand the macroscopic expression of this alteration was increased fragility.

Ochronotic Densification. By E. G. L. BYWATERS, J. DORLING, and J. SUTOR (*Taplow*).

The characteristic radiological opacity of the intervertebral regions in ochronosis has been attributed to bony sclerosis following break-up and loss of cartilage. Histological and crystallographical study of the discs from a Birmingham patient (of Dr. Clifford Hawkins) has shown the presence of hydroxyapatite in the degenerating disc material and in that protruded when degeneration is complete. By contrast, synovial membrane contains calcium pyrophosphate crystals. This identification has been confirmed by x-ray diffraction study.

Discussion

DR. E. N. GLICK (*London*) Do you know whether any of these patients had had attacks of pseudo-gout in the spine or in the peripheral joints in view of the calcium deposits?

PROF. BYWATERS The two patients whom we have seen at Taplow have not had attacks of pseudo-gout.

DR. N. WILLIAMS (*Birmingham*) The Birmingham patient with ochronosis did in fact have calcium pyrophosphate crystals in the synovial fluid and these had been present for some 4 years. But there was never a severe infiltration with inflammatory cells. Usually the cell count was about 600 and these were mainly large mononuclear cells, so that it seems to have been a chronic process rather than an acute arthritis caused by the crystals.