

Any Questions ?

We publish below a selection of those questions and answers which seem of general interest. It is regretted that it is not possible to supply answers to all questions submitted.

Aetiology of Microcephaly

Q.—Have there been any recent advances in our knowledge of the aetiology of microcephaly?

A.—There has been little advance in our knowledge of the aetiology of microcephaly recently. A number of authorities consider that there is a distinct type of microcephaly known as the "true" variety. Brushfield and Wyatt¹ found that approximately half of 147 cases were "true" microcephalics. Penrose² considers that the true variety, which he distinguishes as having a relatively long and narrow head, is due to a recessive gene, and Hanhart³ found 10 microcephalics who were related to each other. However, the clinical distinction into "true" and "other" cases is very difficult in practice. It is now well established that some cases are due to irradiation during pregnancy,^{4,5} and it has also been shown^{6,7} that a number of cases followed the atomic bomb explosions in Japan. It seems very likely that many other cases of microcephaly are due to environmental factors operating early in pregnancy.

REFERENCES

- 1 Brushfield, T., and Wyatt, W., *Brit. J. Child. Dis.*, 1926, 23, 265.
- 2 Penrose, L. S., *The Biology of Mental Defect*, 1954. London.
- 3 Hanhart, E., *Arch. Julius-Klaus Stift.*, 1943, 18, 632.
- 4 Murphy, D. P., *Amer. J. Obstet. Gynec.*, 1929, 18, 179.
- 5 Goldstein, I., and Wexlar, D., *Arch. Ophthalm. (Chicago)*, 1931, 5, 591.
- 6 Plummer, G. W., *Pediatrics*, 1952, 10, 687.
- 7 Yamazaki, J. N., Wright, S. W., and Wright, P. M., *J. cell. comp. Physiol.*, 1954, 43, Suppl. 1, 319.

Precooked Meat

Q.—It is usual in some hospitals and institutions to pre-cook meat, particularly roasts, on the day before it is required and then to reheat before serving. This is done for administrative convenience. I understand that certain education authorities have forbidden this practice in the case of meals for schoolchildren. Are there any dangers in it?

A.—If cooling is slow and there is a period of warm storage, precooking meat or poultry carries a risk of *Clostridium welchii* food-poisoning. This is true not only when the precooking is done on the previous day but even when it is done only a few hours before the meat is eaten.

The spores of certain food-poisoning types of *Cl. welchii* can withstand boiling or steaming for 4 or 5 hours, and furthermore these organisms multiply rapidly at fairly high temperatures—e.g., 40–50° C. Food-poisoning strains of *Cl. welchii* may be found in a proportion of animal carriers and also on and within meatstuffs and poultry as they reach the canteen.

To overcome this danger meats should be either cooked so that contaminating spores are killed (e.g., by steam under pressure, possibly by radiation, or by the efficient roasting of small joints); or cooked in the ordinary way and eaten the same day with as short a gap as possible between cooking and eating; or cooked, cooled rapidly (within 1½ hours), and refrigerated until required. If there is no possible alternative but the last procedure, then the size of joints should be limited to not more than 6 lb. (2.7 kg.) in order to facilitate both the penetration and loss of heat; while bulks of stews or soups should be distributed into shallow containers to accelerate the speed of cooling before refrigeration. The criticism that meats can be carved economically only if cold is now invalid, as new makes of machine are able to slice as thinly from hot joints as from cold.

The reheating of meat at temperatures sublethal to bacteria may serve to increase the numbers of organisms

present. It may even convert a non-infective or non-toxic dose of bacteria or toxin to one which will cause symptoms. These principles apply also to gravies and stocks.

As well as the particular hazard of *Cl. welchii* food-poisoning, there is a danger that other types of food-poisoning organisms such as staphylococci or salmonellae may develop on precooked meats if they are carelessly handled after cooking and stored at temperatures conducive to bacterial multiplication.

Standards of Growth in Adolescence

Q.—How can one decide whether an adolescent's shortness in stature represents simply a normal variation from the mean for his age, weight, and build, or a condition demanding further study? If the latter, what investigations are indicated?

A.—Unfortunately, there are at present no adequate standards for heights and weights applicable to adolescents in Britain. In any case the assessment of normality of size in adolescence must be made in relation to whether or not the adolescent spurt in growth has occurred, and not in relation to chronological age, which at adolescence means very little.¹ The best way to go about this problem would seem to be as follows: Take a radiograph of the left hand and wrist of the adolescent in question and determine his skeletal age.² Then, from the Bayley and Pinneau tables,³ see what adult height is predicted from the present height and skeletal age. The decision whether or not the predicted adult height is normal can then be made in the light of general experience.

If the predicted adult height is grossly below normal the only investigations that are likely to help would be measurements of the father and the mother to assess the factor of heredity, and a general medical investigation to make sure that the child was not suffering from any chronic disorder. Investigations in such cases, however, usually yield negative results, and at present treatment is quite unsatisfactory. It may well be that such patients have suffered from a lack of growth hormone during the growing period, but we have at present no means of determining whether or not this is the case; and growth hormone preparations are not as yet effective therapeutically.

REFERENCES

- 1 Tanner, J. M., *Growth at Adolescence*, 1955. Blackwell Scientific Publications, Oxford.
- 2 Greulich, W. W., and Pyle, S. I., *Radiographic Atlas of Skeletal Development of the Hand and Wrist*, 1950. Oxford University Press, London.
- 3 Bayley, N., and Pinneau, S. R., *J. Pediat.*, 1952, 40, 423; 1952, 41, 371.

Underclothes for All Seasons

Q.—What is the best all-the-year underclothing for a person who works in the hot atmosphere of operating theatres during the week and at week-ends attends to his small-holding in all weathers? Is the string vest the answer?

A.—Underclothing is a matter of personal preference and prejudice. Any advice given is inevitably coloured by personal experience, and any advice received contrary to "experience" is likely to be ignored; but I would say that, unless the questioner is prepared to vary his outer garments according to weather, activity, and environment, he will never be comfortable wearing the same weight and type of underclothes all the year round. This assumes that underclothes are being worn for warmth and not simply for hygienic reasons.

The thermal insulation provided by any garment is a function not of the fabric *per se* but of the air trapped in and under it; the string vest by itself traps very little air, but it allows more air than otherwise to be trapped by garments worn over it, thus improving their insulation. The "warmth" of the string vest therefore depends upon its being covered up; worn under the surgeon's apron and gown it would be almost totally enclosed (unless the surgeon leaves the back of his gown undone) and would be somewhat hot to wear in the operating theatre. But for hard work in the open, especially in a cool climate, a string

vest is the ideal garment. The outer garment must be so designed that it can be opened up widely, exposing the vest and allowing the trapped air to escape, so that when the wearer has warmed up insulation can be reduced; when he stops working and begins to cool off the outer garment can again be closed over the vest to conserve body heat. Properly used in this way, the string vest is effective and comfortable.

Hiccups in Elderly Hypertensive

Q.—*What treatment is advised for repeated attacks of severe hiccups in an elderly hypertensive who has had a coronary thrombosis and a hemiplegia in the past and who now from time to time suffers from attacks of congestive failure? The hiccups come on every two or three weeks, and last a few days without intermission. Chlorpromazine and barbiturates have proved ineffective.*

A.—The problem is to break the rhythmic reflex. Simple measures like sucking ice may occasionally do the trick. Sedation in this case has apparently failed. Local analgesics such as very dilute procaine solution, if swallowed, may break a reflex from the pharynx or oesophagus. Re-breathing (from a paper bag) to get a strong carbon-dioxide stimulus to respiration may help. Operations on the phrenic nerve have actually been done for this condition, but are not recommended.

Carpal Tunnel Cuff Test

Q.—*What is the "carpal tunnel cuff test"? How useful is it in the diagnosis of the carpal tunnel syndrome?*

A.—The "carpal tunnel cuff test," correctly styled the pneumatic tourniquet test for the carpal tunnel syndrome, was described by R. W. Gilliatt and T. G. Wilson.¹ It depends upon the theory that paraesthesiae, the outstanding complaint of patients with the carpal tunnel syndrome, are caused by ischaemia of nerve trunks. In normal persons the inflation of a sphygmomanometer cuff around the upper arm produces "pins and needles" felt mainly in the palm and in the ulnar half of the hand, never predominantly in the thumb, index, and middle fingers. In patients whose median nerves have already been rendered somewhat ischaemic by compression in the carpal tunnel the inflation of such a cuff produces "pins and needles" predominantly in the median area of the hand. In some such cases actual sensory loss develops in the median area a minute or so after the cuff is inflated.

The test is simple and useful. But, like so many other clinical tests, its usefulness is rather limited by the fact that, though it is positive in the obvious case of median compression, it is often equivocal and unhelpful in the doubtful case. A negative tourniquet test does not mean that the patient will not be cured by decompression of the median nerve.

REFERENCE

- ¹ Gilliatt, R. W., and Wilson, T. G., *Lancet*, 1953, 2, 595.

Causes of Leucopenia in Some Infections

Q.—*Some infections promote a leucocytosis whereas others are associated with a leucopenia. Why should this be so, and in particular why should typhoid fever be associated with a leucopenia?*

A.—On the whole, infections that cause the formation of pus stimulate a polymorphonuclear leucocytosis, while those not producing pus do not. In these cases the leucopenia—really a neutropenia, as the lymphocytes are hardly affected—may be due to three causes: diminished production of polymorphs in the bone marrow, the result of toxins or nutritional factors; increased destruction, as in some cases of agranulocytosis; or alteration in distribution. This last appears to be the most important cause, and has been shown by Menkin¹ to be due to a leucopenia-producing material which can be isolated from inflammatory exudates. Injections of this substance lead to trapping of polymorphs in the lungs,

liver, spleen, and bone marrow with a resultant neutropenia. Robertson and Yu² found that injections of filtrates of *Salmonella typhi* caused accumulation of leucocytes in the liver and spleen, and concluded that the leucopenia in this disease was due to redistribution.

REFERENCES

- ¹ Menkin, V., *Int. Arch. Allergy*, 1953, 4, 131.
² Robertson, R. C., and Yu, P. H., *Caduceus*, 1940, 19, 73.

NOTES AND COMMENTS

Congenital Cataract and Mental Defect.—Dr. GORDON DUTTON (Ottershaw, Surrey) writes: The answer to the question on congenital cataract and mental deficiency ("Any Questions?" January 19, p. 181) seems to leave out one very important point—the question of galactosaemia. As this may well be a preventable disease in that removal of lactose from the diet may lead to considerable amelioration of the signs of oligophrenia as well as regression of cataracts, and as the condition also appears to be a genetically determined syndrome, it is important to exclude it by testing for reducing substances in the urine.

OUR EXPERT replies: It is a wise precaution, as Dr. Dutton suggests, to consider the diagnosis of galactosaemia in any child with cataract and mental defect. There are a number of reasons why this diagnosis is improbable in the children in question. The cataracts are specified as congenital; in galactosaemia they develop in the first few months of life. No history is given of such prominent features of galactosaemia as failure to thrive, albuminuria, and hepatic enlargement. The medical practitioner who sent in the question had presumably performed routine tests for reducing substances in the urine on several occasions and found none. But, since the presence of galactose may be missed in routine testing for sugar in urine, Dr. Dutton's suggestion is a practical one.

Doctors with Cancer.—Dr. M. DONALDSON (Oxford) writes: The last part of the answer to the first question refers to a comparison between doctors and lay people in the delay in seeking advice when suffering from cancer ("Any Questions?" January 5, p. 57) and quotes a paper by Robbins and others.¹ Surely it is statistically unsound to accept a comparison between such different figures as 229 cases among doctors and 2,000 lay patients. Moreover, there is insufficient detail about the types of cancer grouped under "Superficial," "Thorough," and "Special" to justify any such comparison. The figures in the first half of the answer seem to contradict the conclusions. The death rate for cancer among the profession at each of the important sites is lower than among white males in general. It is improbable that this could be true without earlier diagnosis.

REFERENCE

- ¹ Robbins, G. F., Macdonald, M. C., and Pack, G. T., *Cancer*, 1953, 6, 624.

OUR EXPERT replies: The comparison between 229 patients on the one hand and 2,000 on the other is admittedly open to criticism. Unfortunately I do not know of any other or better investigation which can be quoted. Dr. Donaldson's contention that a lower death rate among doctors than among laymen could hardly be true "without earlier diagnosis" is equally open to criticism. It could easily be true if, for instance, they had better treatment, as well they might have done.

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