

## The Ulysses syndrome

A recent paper on mass laboratory screening by Korvin and Pearce (*Can Med Assoc J* 105: 1053-1055, 1157-1161, 1971) focusses attention on the problem of apparently abnormal results in healthy people. It is usually accepted that the normal range in laboratory investigation excludes the upper and lower 2.5% of the results. Therefore 5% of the normal population will be labelled abnormal even if there is nothing the matter with them. If each person has 20 tests performed then 66% of these healthy people will have one or more abnormal results.

False positive results are not restricted to pathology. Such results are produced by clinical and radiological examination. The conscientious physician finds them hard to dismiss and usually investigates them further. For example, Jason fell down and hurt his leg. Mother did not think it was anything more than a bruise, but Grandma told her to take him to the doctor. The doctor did not think a fracture likely but just to be on the safe side had a radiograph taken. There is no fracture but on the corner of the film, well away from the site of injury, there is an area of abnormal bone. After several unhelpful blood tests the worried parents take Jason to an orthopedic surgeon who thinks it is probably a normal variant. But, because he cannot be entirely

certain and because the family have worried themselves into the belief that Jason has cancer, he biopsies the lesion. The pathologist, who has more problems with bone specimens than with any others, can on this occasion make a confident diagnosis of fibrous cortical defect. The child falls down on the slippery hospital floor and fractures his leg through the area that was weakened by the operation and spends six weeks in a cast while it heals.

This is a typical example of the Ulysses syndrome. The characteristic features are mental and physical disorders which follow the discovery of a false positive result. Ulysses, you may remember, fought in the Trojan war and then decided to come home. Twenty years passed before he returned to his point of departure. During this time he was involved in a series of needless, often hair-raising, frequently dangerous, and occasionally pleasurable adventures. The syndrome has been named for Ulysses because patients with it, though healthy enough at the outset, make a long journey through the investigative arts and experience a number of adventures before reaching their point of departure once again. The Ulysses syndrome should be distinguished from an iatrogenic disorder. The Ulysses syndrome is a side effect of investigation and not of therapy.

This syndrome is not uncommon

and most physicians will be able to recall examples of the condition. After studying the syndrome for some time it has become possible to classify the condition on the basis of pathogenesis.

1. *The mischievous investigation.* Every unnecessary investigation puts the patient in jeopardy of the Ulysses syndrome. Causes of this are: (1) mass screening; (2) insurance which covers the cost of investigation; (3) residents carrying out investigative "overkill" to avoid being criticised by the staff member; (4) laboratory request forms on which are printed such a feast of tests that the doctor who requests only one or two feels that he has either a dull, uninteresting practice or is rather old-fashioned.

2. *Uncritical examination.* Some doctors always examine everything but only understand a certain number of the signs they find. A specialist examining an unfamiliar part of the body with the skill of a third-year medical student is particularly likely to be misled by physical signs. The result will probably be a consultation for some trivial variant. The consultant may stretch his imagination for some circumstances in which this variant may not be as trivial as a less knowledgeable man might think. At the dénouement, after a volley of investigations, explanations such as these are commonly heard, "I

didn't think it was anything. But you can't be too careful because there was a paper from Mayo's recently reporting a case of Finkelstein's syndrome which presented just like this."

J.F., aged 27, was on his honeymoon abroad when he injured his right ankle. The doctor he consulted had just attended a course on fractures and ordered a radiograph of the whole leg to avoid missing an ankle injury with a high fracture of the fibula, a rare injury he had just learned about while on the course. And when the radiograph was taken this rare injury was apparent. The patient spent the rest of his honeymoon on crutches and in a long leg cast. On his return the cast was removed. When he looked at his new radiograph J.F. was alarmed to see that the fracture looked just as it had before. After he was told that the fracture was no fracture but an uncommonly obvious nutrient artery canal his anxiety was, surprisingly, replaced by amusement expressed in laughter.

3. *The serpentine variant.* The Indians have a legend of two snakes which are consuming each other tail first. The legend gives its name to the situation in which a purely neurotic patient alights on perturbing symptoms which she takes to her doctor. She is then taken aback by her doctor's unexpected interest. In place of being reassured she is investigated. A false positive result or two will make her ill, the doctor anxious and the diagnosis completely obscure.

4. *The inverted serendipity variant.* Serendipity is making a happy discovery by chance. J.F.'s doctor may well have said "Thank God I x-rayed the whole leg and managed to attend that course or else I would have missed that fracture." It would have been much better if he had missed that fracture; this is inverted serendipity or a red hering.

We have all been grateful for serendipity as a diagnostic aid. For example, I recall a child with one slightly crooked toe. It took only a moment to examine it but the mother stood there, hostile, obviously expecting me to do something more. So I looked at the child's back. She had a scoliosis in need of treatment.

Some of us hope to make not just happy, but also great, discoveries by chance. Marie Curie left a key on a pile of photographic film near a sample of radium and founded radiography. Alexander Fleming started luckily with Praed Street dust and gave us penicillin. Perhaps if we request every investigation for a few of our patients something new will be discovered. It is more likely we will produce another Ulysses syndrome.

5. *Non-investigational investigations.* Just as many regimens of treatment once thought to be of value, are today dismissed as useless, so a number of once fashionable investigations are now thought to be worthless. It is hard to recognise those in current use but here is one. A laboratory introduced a new multipurpose request form for use with venous and arterial samples of blood. Among the many tests offered on this form was one for  $PO_2$  determination. In one year the number of requests for  $PO_2$  level on venous blood obtained using a tourniquet, jumped from 10 to 4000 per year. It is an entirely useless investigation.

### Conclusions

The Ulysses syndrome is a growing problem but can be prevented if the clinician views with suspicion the unexpected abnormal result. The etiology of the syndrome is attributable to a meritorious desire to investigate a patient fully, the pathogenesis to gullibility.

The syndrome characteristically runs a short course and no mortality or permanent harmful effects have yet been noted. The Ulysses syndrome is more benign than the false-negative syndrome and certainly carries a better prognosis than uninvestigated disease.

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## BOOKS RECEIVED

Books are acknowledged on receipt. In some cases reviews will be published.

### Neurology

**THE TRAUMATIC AMNESIAS.** W. Ritchie Russell. 90 pp. Illust. Oxford University Press, London; Oxford University Press, Toronto, 1971. \$7.25.

**THE TREATMENT OF HEAD INJURIES IN THE THIRTY YEARS' WAR (1618-1648).** Joannis Scultetus and His Age. Louis Bakay. 115 pp. Illust. Charles C Thomas, Springfield, Ill.; McGraw-Hill Company of Canada Limited, Toronto, 1970. \$10.75.

**ULTRASTRUCTURE OF THE PERIPHERAL NERVOUS SYSTEM AND SENSE ORGANS.** Atlas of Normal and Pathologic Anatomy. Jean Babel, Albert Bischoff, and Heinrich Spoendlin. 459 pp. Illust. The C.V. Mosby Company, St. Louis, Mo., 1970. \$47.55.

### Nuclear Medicine

**CENTRAL NERVOUS SYSTEM INVESTIGATION WITH RADIONUCLIDES.** Second Annual Nuclear Medicine Seminar. Edited by Albert J. Gilson and William M. Smoak. Ill. 430 pp. Illust. Charles C Thomas, Springfield, Ill.; McGraw-Hill Company of Canada Limited, Toronto, 1971. \$33.00.

**DIAGNOSTIC NUCLEAR MEDICINE.** Edward R. Powsner and David E. Raeside. 677 pp. Illust. Grune & Stratton Inc., New York; Longmans Canada Limited, Toronto, 1971. \$34.50.

**LIQUID SCINTILLATION COUNTING.** Vol. 1. Proceedings of a Symposium on Liquid Scintillation Counting, University of Salford, September 21-22, 1970. A. Dyer. 140 pp. Heyden & Son Limited, London, 1971. \$12.00.

### Nutrition

**AN ANNOTATED INTERNATIONAL BIBLIOGRAPHY OF NUTRITION EDUCATION.** Materials, Resource Personnel, and Agencies. Edited by Clara Mae Taylor and Katharine P. Riddle. 192 pp. Columbia University Press, New York, 1971. Price not stated. Paperbound.

**CONTROLLING DIABETES WITH DIET.** Annette Gormican. 221 pp. Illust. Charles C Thomas, Springfield, Ill.; McGraw-Hill Company of Canada Limited, Toronto, 1971. \$8.00 paperbound.

**THE ECOLOGY OF MALNUTRITION IN EASTERN AFRICA AND FOUR COUNTRIES OF WESTERN AFRICA.** Vol. 9. Studies in Medical Geography. Jacques M. May and Donna L. McLellan. 675 pp. Illust. Hafner Publishing Company, New York, N.Y. 1970. \$25.00.

**NUTRITION.** Proceedings of the Eighth International Congress, Prague, September 1969. Edited by Josef Masek, Katerina Osancova and Sir David P. Cuthbertson. 832 pp. Illust. Excerpta Medica Foundation, Amsterdam, 1970. \$57.50.

### Obstetrics and Gynecology

**ABORTION IN A CHANGING WORLD.** The Proceedings of an International Conference held in Hot Springs, Virginia, November 17-20, 1968, by the Association for the Study of Abortion. Vols. I and II. Edited by Robert E. Hall. 615 pp. Illust. McGill-Queen's University Press, Montreal, 1970. \$11.00 each.

**CLINICAL OBSTETRICS AND GYNECOLOGY.** Vol. 13, No. 4—December 1970. New Concepts in Gynecologic Oncology, edited by Robert C. Knapp. Tuberculosis of the Female Genital Tract by George Schaefer. pp. 805-1204. Illust. Harper & Row, Publishers, Inc., New York, 1970. Quarterly publication. Subscription price \$22.00 per year.

**COLPOSCOPY.** A Scientific and Practical Approach to the Cervix in Health and Disease. Malcolm Coppelton, Ellis Pixley and Bevan Reid. 357 pp. Illust. Charles C Thomas, Springfield, Ill.; McGraw-Hill Company of Canada Limited, Toronto, 1971. \$25.75.

**CONTRACEPTION TODAY.** A medical text based on the proceedings of the FPA Medical Training Conferences in York, Bristol and London 1970. Edited by A. J. Smith. 189 pp. Illust. The Family Planning Association, London, 1971. 11.00 (approx. \$2.50) paperbound.

**EXPERIMENTAL APPROACHES TO TOXEMIA OF PREGNANCY.** Ben. H. Douglas. 168 pp. Illust. Charles C Thomas, Springfield, Ill.; McGraw-Hill Company of Canada Limited, Toronto, 1971. \$14.50.

**FROM NOW TO ZERO.** Fertility, Contraception and Abortion in America. Leslie Aldridge Westoff and Charles F. Westoff. 358 pp. Illust. Little, Brown and Company (Canada) Limited, Toronto, 1971. \$9.00.

**GYNAECOLOGY.** By Ten Teachers. 12th ed. Edited by Stanley G. Clayton, Donald Fraser and T. L. T. Lewis. 560 pp. Illust. Edward Arnold (Publishers) Ltd., London; The Macmillan Company of Canada Limited, Toronto, 1971. \$16.50.

**GYNECOLOGY.** Condensed from Novak's Textbook of Gynecology, Eighth Edition. Edmund R. Novak, Georgeanna Seegar Jones and Howard W. Jones. 402 pp. Illust. The Williams & Wilkins Company, Baltimore, Md., Burns & MacEachern Ltd., Toronto, 1971. \$13.75 paperbound.