

REVIEWS

THE ASSESSMENT OF PAIN IN MAN AND ANIMALS

Edited by Keele, C.A. and Robert Smith. The Universities Federation for Animal Welfare, E. & S. Livingstone, Edinburgh and London, 1962. Price 30 shillings.

This is an extremely interesting book in more ways than one. It is a record of the proceedings of an International Symposium which has brought under its roof diverse disciplines including pharmacologist, physiologist and psychologist to discuss a common topic — a topic, namely pain, ephemeral enough as to be incapable of definition. This method of seeking uniformity in diversity has the advantage of broadening the outlook of the subject so that a narrow sectarian interest cannot dominate the scene, but it shows up too the disadvantage in that an average reader is so bewildered by the different approaches that he may find difficulties in following some of the refinements in a particular technique or argument. At the same time it is a record of a symposium held under the auspices of The Universities Federation for Animal Welfare (UFAW), a body which must necessarily set the basic theme to the study.

In medicine, doctors have for a long time accepted the concept of the sanctity of life, but it has become painfully evident that the concept is confined to human life. Hence an animal is fair game to any researcher, and gruesome experiments like treadmills, prolonged restraint, or repeated deprivation of food or drink, are almost daily fares of readers of publications on basic research. It is accepted that animal experiments are of untold benefits to man and that they are necessary, because our knowledge has not reached the stage where vital experiments can be replaced entirely by non-sentient ones. Nevertheless, it should be borne in the mind of every experimenter that such know-

ledge is gleaned from animal suffering, and should therefore be not haphazard and purposeless. It may seem very little indeed to torment an animal normally unpopular such as the rat, but it is little appreciated that in losing the sense of concern for suffering and life of a species, an experimenter can easily lose the sense of concern for the welfare of another under the guise of the thirst for pure knowledge or the search for a benefit for the majority. It is such inured conscience that has led to medical horrors publicised during the Nuremberg trials. Doctors are men peculiarly placed in that they have great potentialities for doing harm, and if such men lose their hold on basic ideals of man, then the culling of knowledge may easily degenerate into monstrous vivisection and even offences against their fellow men!

Hence the care for animals, the self-discipline to carry out exacting experiments and the meticulous care to avoid unnecessary pain must be the pre-requisite of all experimenters, and it is for this that this book is of superlative interest. Apart from the ethical consideration, the discussion on pain and its perception, on placebo effect and the bias in clinical trials, and or the practical methods of animal management, are of great interest, and even for those with no specific interest in pain as a topic, much will be found to be stimulating and provocative. It is a book that should find its way into the hands of every bona fide researcher whose interest is not just knowledge but the alleviation of suffering.

Gwee Ah Leng

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RESISTANCE OF BACTERIA TO THE PENICILLINS

Edited by A. V. S. De Beuck and Margaret P. Cameron. J. & A. Churchill, London.

Of all the many dozens of antibiotics that have been introduced and in not a few instances, abandoned, penicillin remains the miracle drug that it was thought to be when it first came into practical use. Although some drawbacks were discovered, research has continued to overcome them and to extend the applications of penicillin in therapy.

In "Resistance of Bacteria to the Penicillins", another of the Ciba Foundation's contributions to Medical science, a panel of experts discuss some recent developments in research on penicillin. The problem of penicillin resistance is fortunately not serious at present in this country, but conditions may change and certainly we have enough cases of staphylococcal infec-

tion resistant to penicillin treatment. Such resistance is invariably due to the emergence of penicillinase producing staphylococci — i.e. penicillin destroyers.

The topics discussed in the symposium were presented by

1. E.B. Chain : Penicillinase-resistant penicillins and the problem of the penicillin-resistant staphylococci.
2. H.J. Rogers : Mode of action of the penicillins.
3. M.R. Pollock : Penicillinase.
4. R. Knox : Different types of resistance to different penicillins.
5. Mary Barber : Coagulase-positive staphylococci resistant to benzyl penicillin, methicillin and other penicillins.

Dr. E.B. Chain in the opening session describes how a penicillinase-resistant penicillin was developed. This is now available under the trade name of Methicillin and more potent derivations have been developed.

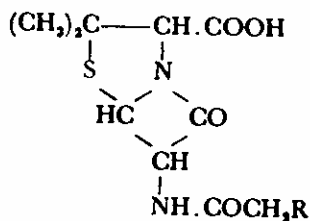
Dr. E.B. Chain understandably holds the opposite view. He advocates that the most potent penicillin, i.e. that which is effective for both penicillinase and non-penicillinase producers should be used right away. Failure of treatment due to use of "standard" penicillin would engender loss of faith in penicillin which would be a pity and perhaps an unjustifiable change to some other antibiotic.

In Chain's opinion, history shows that research invariably came up with adequate answers to problems as they arise and to withhold methicillin, for example, out of respect to staphylococci would be unwarranted pessimism.

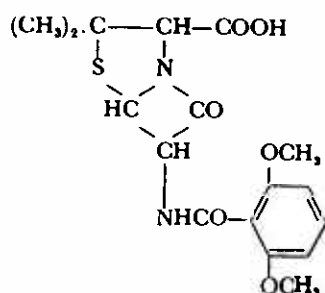
The other topics elaborate some of the points mentioned in the first article. The most interesting, perhaps, to our readers being the discussion by Dr. Mary Barber on the Resistance of coagulase positive staphylococci. A valuable aspect of the symposium is the discussion which follows each presentation and which is reported in extension.

The discovery of methicillin is a fascinating story of chemical engineering—based on the understanding of how penicillinase destroys penicillin. In essence, methicillin is now produced by partial breakdown of phenyl-penicillin which is penicillinase sensitive and substitution to form a penicillinase resistant compound. The following diagram makes this clear.

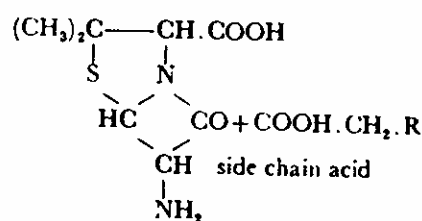
There are two schools of thought in regard to the use of the new penicillins. The conservatives advocate that "standard" penicillins, e.g. Penicillin G should be used routinely in the treatment of infections due to presumably penicillin resistance organisms, e.g. staphylococci, and only if treatment is unsuccessful or if cultures show that the organism is not sensitive (because of penicillinase production), penicillinase resistant penicillins should be used. This conservatism arises from consideration that staphylococci being notoriously adaptable, may evolve strains which were resistant to penicillinase resistant penicillins, thus militating against the advantages the latter at present hold.



Penicillin



II. 6-Aminopenicillanic acid



Dimethoxyphenyl penicillin (Methicillin)