

ship would be expected between milk-clotting ability and protein-splitting ability even though the same site on one enzyme may be involved in both of these actions. However, once it has been established that an enzyme preparation consists of only one enzyme having the two actions mentioned and is not a mixture of two enzymes, then the milk-clotting test can be advantageously used with the appropriate correlation factor to assay an enzyme for protein-splitting activity.

The complete explanation of the effect of combinations of enzymes on the low-temperature clotting of

milk may provide important clues to the structure of the casein molecule as well as to the mode of action of certain enzymes.

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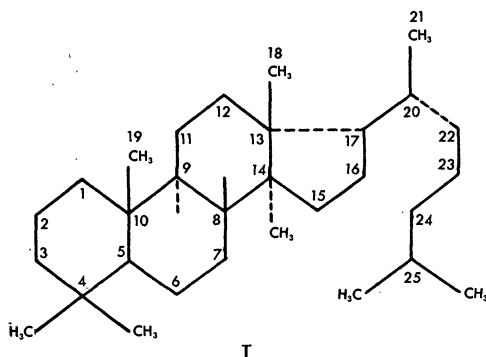
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Comments and Communications

Suggested Nomenclatural Revision for "Triterpenoid" Steroids

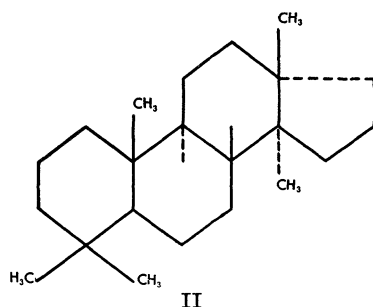
RECENT studies by Ruzicka (1) and Barton (2) have indicated that the lanostane nucleus may be represented by (I). Systematically (3) this may be desig-



nated as 4,4', 14 α -trimethylecholestane.

It has been noted that the English workers do not use the steroidal numbering system in publications relating to this series of compounds, preferring instead to apply triterpenoid ciphers. This has tended to create confusion where none need exist, as the lanostane series is undoubtedly steroidal in all major respects and should be treated as such.

As an example of the dichotomy which is being practiced, Barton has recently proposed that the name "lanane" (II) be applied to the nucleus arising from



lanostane by degradation. There is no particular objection to this new trivial name but the fact that it has been numbered as a terpene seems highly objectionable indeed, since it cannot be construed as anything but 4,4', 14 α -trimethylandrostandane and should be numbered as such.

Since other nuclei (e.g., euphane) have been shown to be steroidal in nature, it is considered to be particularly important at this time to agree on a consistent nomenclature for the "triterpenoid" steroids. The usages of the Ciba Conference (3), though not completely satisfactory, are recommended.

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The Need for a Comprehensive Medical Audio-Visual Aid Center

THE demand for teaching materials of all types is felt in centers of medical activity. Medical schools and institutions receive repeated requests for specimens, models, drawings, photos, exhibits, and various audio-visual aids. One physician asked for a model of coarctation of the aorta to illustrate a lecture before his local medical society. Another did not know where he could obtain anatomic drawings of the components of the mediastinum. A medical student requested a series of x-rays to portray the evolution of lung cancer. An intern wanted to look through a bronchoscope. A resident physician was interested in hearing pericardial friction rubs on a phonographic record. A teacher was setting up an exhibit on electrocardiography and desired electrocardiograms illustrating the common abnormalities. An anatomist sought a three-dimensional model of the renal glomerulus. A history teacher wished to display models of the blood pressure machines in all stages of its development. An inventor

desiring to improve the visual field of the gastroscope wanted models of gastroscopes from its inception to the present. Television studios needed many kinds of medical aids to illustrate their programs.

Appreciating the need, a group of medical people under the leadership of David J. Davis, Tom Jones, Thomas G. Hull, A. J. Carlson, Morris Fishbein, Haven Emerson, Burrell Rawlston, Chevalier Jackson, Hobart Reimann, and Raymond Allen organized a movement in 1950 to create interest in setting up a Medical Audio-Visual Center to serve the needs of the country. It proposed to extend the splendid work of the museum of the Armed Forces Institute of Pathology and make materials and exhibits available by loan for the purpose of study, teaching, and research. These materials include graphs, charts, EKG's, electroencephalograms, kinematograms, slides (both gross and microscopic), bacteriologic cultures, anatomic and pathological specimens, x-ray films, drawings, maps, photos, autographs, coins, transparencies, models in every medium, dioramas, panoramas, statuary, stamps, instruments (both surgical and medical), drugs, and relics.

The best of the exhibits presented at medical meetings would be preserved and whenever possible loaned, instead of being dismantled and discarded, as happens today. Much of the material is at hand, but the administrative machinery to put them to use is lacking.

A noble encyclopedic project like this, though of breath-taking scope, can be attained with the unselfish cooperation of medical organizations. The success of the Midwest Inter-Library Center in Chicago, which receives literature from, and loans to, twelve different universities which support it, is an example of cooperative achievement.

Such an institution proposes, in addition, to secure, preserve, and exhibit historical items, to perpetuate and make known the best of medical culture and ethics, and to deny these items from reaching the refuse heap, cellar, garret, or rotting in private collections, or from being pawned off by private collectors. Encouraged through the exchange of valuable paintings by art museums, it proposes to make available to medical schools and medical societies the precious manuscript of the Edwin Smith surgical papyrus now treasured by the Library of the New York Academy of Medicine, the original inhaler of William Morton encased in the ether dome at Massachusetts General Hospital, or the instruments that William Beaumont used on the gastric fistula of Alexis St. Martin, now on display at the University of Chicago Medical Library, and of the numerous memorabilia of which each center is proud. It is interested in establishing an agency to ferret out medical treasures of all kinds. What has happened to the hearts from which Dr. James B. Herrick made his discovery of myocardial infarction in 1912? Where are the original rubber gloves invented by William S. Halsted in 1890?

The creation of a centralized audio-visual agency supported by the medical organizations of the country will have a profound effect upon the dissemination of

medical knowledge, modern and historic, and will stimulate research teaching and medical culture. A rich field welcomes the industrious.

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Pain—Controlled and Uncontrolled

"THINKING in pairs" is an old intellectual pastime. Dichotomies are set up between experimental methods (see Beecher, *SCIENCE*, 116, 157 [1952] versus Hardy, Wolff and Goodell, *J. Clin. Invest.*, 27, 380 [1948]) and read into results by the observers themselves. Objections against dichotomies create new ones, or simply substitute terms, e.g., *physiological* for *experimental* ([Ravich, *SCIENCE*, 118, 144 [1953]). All these cleavages cut across each other and in the end the pattern becomes impossible to disentangle. Dichotomies serve a certain purpose within a limited context but befog the minds of those who inflate them into becoming all-embracing issues.

Pain produced in the laboratory has some, but not all, aspects in common with pain produced by disease. It has some common aspects in animals and in man. In some other, but not in all, respects these various pains obviously differ, as does to a certain extent each moment of pain from the next in each suffering organism. All pain has physiological aspects, as well as such aspects as are anatomical, pathological, and zoological: you rarely find but what you look for. Pain is a biological phenomenon, but even the historian, the sociologist, anthropologist, logician, poet, or others may have something useful to say about it. An interesting and valid dichotomy could, for instance, be made between "scientific" and "lay" pain, or between "potential pain" which may be beneficial and "actual pain" which is not.

The Hardy-Wolff-Goodell team are criticized by Beecher (*SCIENCE*, 116, 157 [1952]) for studying contrived pain. Beecher points to the difference between this healthy pain and sick pain, between the emotional setting of the weary, suffering patient and the keen, comfortable subject in the laboratory. The Cornell team (*SCIENCE*, 117, 164 [1953]) grants the point but says rightly that it is not fundamental. Beecher says that it is. However, he adheres to the sensation-reaction dichotomy of the Cornell team. He even uses it as an argument against the validity of contrived pain research. Ravich, finally, distinguishes the "sensorial sensations" of contrived or physiological pain from, should we say, the "senseless sensations" of pathological pain.

It seems that not the artificiality of contrived pain is so much to be deplored as the artificiality of dichotomizing. While there is some difference between the suffering of ordinary mortals and the measured introspections (guessing at the stimulus rather than the sensation) by Hardy, Wolff, and Goodell and their trainees, a rigid dichotomy between sensation and reaction is at least as artificial as that between contrived