TABLE 1

ENZYME CONTAMINANTS OF HYALURONIDASE PREPARATIONS

μg of β-Naphthol of Preparation/mg of Hyaluronidase Preparation

Enzyme	Incubation time hr	Testicular			Bacterial	Crude bacterial			Av comparative values in tissues*
		A	B	C	D	E	F	G	
Acid phosphatase	2	170	135	92.5	0.25	0.50	0.00	1.25	2.9
Alk. phosphatase	1	7.0	3.5	2.0	0.00	0.00	0.00	0.00	2.6
Total esterases	1	370	465	420	0.80	1.10	0.60	1.10	64
Pseudocholinesterase	1	3.75	5.15	1.90	0.35	0.75	0.75	0.65	41
Lipase	5	1.6	2.2	1.8	23.4	0.00	0.00	0.00	0.0
β-D-Galactosidase	2	12.0	47.0	5.0	0.00	0.00	0.00	0.00	2.7
β-Glucuronidase	4	4.2	0.0	0.4	0.00	0.00	0.00	0.00	—
Sulfatase	24	1.5	0.6	2.5	0.00	0.00	0.00	0.00	4.5/4 hr*
Hyaluronidase		13 V.R.U.	20 V.R.U.	12 V.R.U.	15 V.R.U.	4.8 V.R.U.	3.6 V.R.U.	3.2 V.R.U.	

A, B, C Commercial testicular hyaluronidase preparations.
D Commercial bacterial preparation.
E, F, G Laboratory preparations (streptococcal) beef brain-heart infusion broth (Difco) cultures, Seitz filtered, precipitated with $(NH_4)_2SO_4$, dialyzed, and lyophilized.

* Human serum values for all except β-D-galactosidase (rat liver and sulfatase [rat liver]) as μg β-naphthol liberated/mg of serum protein (based on 7.0 g %).

the literature (*4–8*) are given for the same test conditions.[1]

The data indicate the not surprising observation that testicular enzyme preparations contain appreciably more enzyme contaminants than the bacterial products. The testicular preparations were high in acid phosphatases, total esterases, and β-D-galactosidase, with measurable quantities of the others in most cases. The commercial bacterial hyaluronidase preparation was significantly high only in lipase activity. However, it is somewhat surprising that the relatively crude preparations of laboratory streptococcal material were comparatively free from these accompanying enzymes, whereas the magnitude of the contaminants in the testicular products was far greater than anticipated. For instance, permitting Seligman's assumption that the amounts of β-naphthol liberated are proportional to the times of incubation of reactants, it is seen that 30–50 times the titers of acid phosphatase of serum were found in comparable amounts of testicular enzyme protein tested. In these substances the alkaline phosphatases were of the same order of magnitude as the serum values and total esterases were 6 times as high. For β-D-galactosidase, in the absence of a serum value, an elevation of 2–15 times over that for liver tissue was found. Whereas bacteria are known which produce several of these enzymes, our procedure consisting of filtration, salt precipitation, dialysis, and lyophilization is ample to isolate a product relatively free of the hydrolytic enzymes tested. Accordingly, the variability in substrate specificity of both types of preparation may be attributable to such enzymes with the bacterial varieties being more specific. It is conceivable that the degradation of chondroitin sulfate produced by testicular hyaluronidase and not by bacterial hyaluronidase, as well as certain other differences, may be accountable by regarding the former as an unspecific mixture.

[1] The substrate for β-glucuronidase-8-aminobenzoylnaphthylglucuronide was supplied through the courtesy of Arnold M. Seligman, Beth Israel Hospital Surgical Research Department, Boston, Mass., method unpublished.

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The Influence of epi-F, a Stereoisomer of Compound F, on the Glycogenic Property of Compound F (17-Hydroxycorticosterone)

Albert Segaloff and Benjamin N. Horwitt[1]

Department of Medicine, Tulane University School of Medicine and the *Endocrine Research Laboratory of the Alton Ochsner Medical Foundation, New Orleans, Louisiana*

All the known naturally occurring adrenal cortical steroids having a hydroxyl group on the eleven carbon are of the beta configuration. Two of these are corticosterone (Kendall's compound B) and 17-hydroxy-

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corticosterone (Kendall's compound F), which are biologically active with respect to liver glycogen deposition in adrenalectomized animals (*1*).

Incubation of 11-desoxy-17-hydroxycorticosterone (Reichstein's compound S) with certain microorganisms leads to the introduction of a hydroxyl group in the C-11 position, but in the unnatural alpha configuration (*2*). It is also possible to synthesize this unnatural isomer by chemical means (*3*). This differs from Kendall's compound F only by the stereoisomerism at the 11 position and the compound is commonly designated as epi-F.

The antagonistic action of structural analogs to naturally occurring compounds is now so well known as to constitute one of the basic areas of biochemistry (*4*). It has been demonstrated that the presence of oxygen on the 11 carbon of the active adrenal corticosteroids is important in the influence of these compounds on carbohydrate metabolism. It seemed attractive to conceive of the compound with the unnatural configuration at C-11 as a possible antagonist to the carbohydrate activity of the natural compound.

Accordingly, an experiment was designed to test this possibility. Compound F, epi-F, and mixtures were administered to adrenalectomized mice and the glycogenic activity was determined according to the method of Venning, Kazmin, and Bell (*5*). Young adult male mice, CBA × C57 BLK, F_1 hybrids, were used. Seventy milligrams of glucose were administered to each animal. The results are presented in Table 1.

The expected substantial deposition of glycogen was obtained with compound F. Limited glycogen deposition was seen with epi-F. Neither of the levels of epi-F employed had any apparent effect on the glycogen deposition obtained with compound F.

From these experiments it seems apparent that in the ratios employed, epi-F has no effect on the glycogenic property of compound F.

TABLE 1

LIVER GLYCOGEN DEPOSITION IN ADRENALECTOMIZED MICE

Steroid administered	Mg glycogen / 10 g mouse (range)	No. of animals
Control	0.2 (0.1–0.8)	10
20 γ compound F	6.4 (3.1–9.5)	10
500 γ epi-F	0.5 (0.1–2.1)	10
100 γ epi-F	1.3 (0.0–3.4)	9
20 γ compound F + 500 γ epi-F	5.7 (3.1–8.4)	10
20 γ compound F + 100 γ epi-F	7.2 (4.6–9.2)	10

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Book Reviews

An Appraisal of Anthropology Today. International Symposium on Anthropology of the Wenner-Gren Foundation. Sol Tax, Loren C. Eiseley, Irving Rouse, and Carl F. Voegelin, Eds. Chicago: Univ. Chicago Press; London: Cambridge Univ. Press, 1953. 395 pp. $6.00.

In 1952 the Wenner-Gren Foundation sponsored a conference of anthropologists for the purpose of writing and talking about the contemporary state of the science. A committee headed by A. L. Kroeber selected the participants. The written papers have been published as *Anthropology Today* (edited by Kroeber); the verbatim, tape-recorded discussions are available in the volume reviewed here.

The *Appraisal* consists of discussions centering upon the papers; consequently it cannot be read profitably without first reading the other volume. The discussions are organized on an analytical plan which makes sense for an integrated work but which in a transcript of discussions makes for confusion. Conversations on physical anthropology, for example, are found in six different chapters. The book has an index, but this does not help the reader to find his way through pages of talk to reach unexpected and important gems.

What can be learned about anthropology from this book? First of all, empirical richness and variety of data. Second, frank statements of varying schools of thought. Third, important deficiencies: a lack of conceptual integration, poor communication, and a tendency to harp on problems which anthropologists have delayed solving for years because of their failure to devise or learn appropriate concepts and methods.

Although most of the accurate critical strictures possible to make of modern anthropology have been voiced in this book, too many of them show that the speaker (and his listeners) do not comprehend the fact that such deficiencies have been apparent for years to outsiders. Thus one anthropologist notes, with an air of discovery, that the study of larger societies