

In hope of doing each other some good

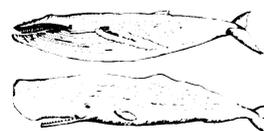
To the protein lab:

We would greatly appreciate a letter from every research team currently engaged either in plucking the amino acids off a protein or stringing them back on. Tell us in the letter, please, how our reagent-manufacturing facilities can best serve you. Awed by your patience at the tasks you have undertaken, we wish to add effectiveness to our small role in the scene. We have already put together a sizable line of protein-lab aids from requests, suggestions, and ideas that the literature puts into our heads. Surely there is more we should be offering.

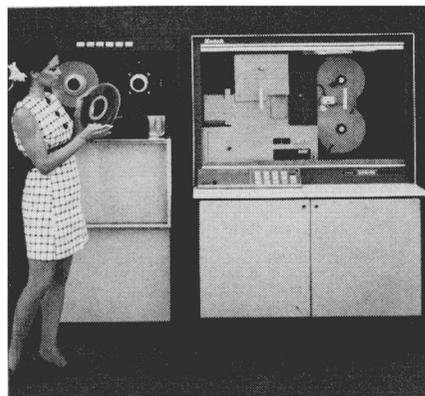
Just to make sure that what you need isn't available right now, it might be well before writing the letter to send for our "Informational" entitled Eastman reagents for protein and polypeptide synthesis and structure determination. Address: Eastman Organic Chemicals, Eastman Kodak Company, Rochester, N.Y. 14650.

One of the more important items listed therein is a grade

of Phenyl Isothiocyanate designated EASTMAN X1484 to indicate that it is especially satisfactory for use with the protein sequenator. Those who have one already or are getting ready to take delivery should see if they agree. Those who hadn't even heard of the protein sequenator should consult *European J. Biochem. 1* (1967) 80-91. There they will learn what a powerful drive is curiosity to know whether there are differences in the first 60 amino acids of the myoglobin molecule between the humpback whale and the sperm whale. They will learn not only that indeed there are differences at the 4th, 5th, 12th, 13th, 35th, and 45th positions but that such a drive can improve the lives and fortunes of many who will never be lucky enough to understand that the differences are important.



Ignore but keep



We are now winding up our 40th year in the microfilm systems business. To celebrate we lure the eye to the KODAK KOM-90 Microfilmer. Instead of microfilming papers of various kinds, it takes magnetic tape from a computer and transcribes the information content

to microfilm at the rate of 90,000 visible characters per second. Wide choice is provided in format, spacing, character

fonts, and special characters. This permits entry to the human mind via the human eye, should any human mind ever be interested enough to look up something in the data. It saves paper, space to store the paper, and massive frustration in wading through the paper. Tell the machine which of three types of retrieval index to put on. A fourth is offered optionally. Interchangeable overlays can superimpose your charts, grids, or other graphics on the displayed information.

Thus we have labored mightily to make it convenient to ignore practically everything a computer puts out and yet keep every bit of it. A faint smile at this achievement is less likely from "business" computer users than from the "scientific" type.

On the other hand, in case your scientific endeavor should call for just this convenience, the Business Systems Division of Eastman Kodak Company, Rochester, N.Y. 14650 wants to find you.

A little hope for the cities

In our own city we had to go less than a mile from our world headquarters to take this picture:



The people who threw those products of the packaging industry there didn't care. They can't think of it as their city. They have always thought of it as somebody else's city. They just live there.

Best way we can think of to encourage

tidiness is to convince the people that the cities really are

theirs. The admirable doctrine that the color of a man's skin is irrelevant to his place in society hasn't convinced them. Perhaps, then, it is not irrelevant. On that assumption, we see one way to help a little.

We note, for example, that Kodak cameras and films are selling like crazy in Harlem. In the nation as a whole, one out of nine hands thrusting a dollar toward a cash register is black. Yet not one out of 100 of the owners of those cash registers has hands of that color. Something out of balance there needs attention.

One role we have played for the past 75 years has been to counsel men on setting up independent businesses of their own as dealers in our products. Right now we are pushing that role hard in the centers of the cities. Maybe we can help convince more citizens that the cities belong to those who live in them.



THE HISTORY OF THE EARTH'S CRUST A Symposium

Edited by Robert A. Phinney

This book presents exciting new evidence—chiefly from sea-floor studies—for continental drift. The papers herein—from a 1966 Goddard Institute for Space Studies Conference—bring together evidence from solid state physics, ocean basins, paleomagnetism, basement age dating, fossil faunal distributions, and the structure of mountain belts. Illus.

\$13.50

EVOLUTION IN CHANGING ENVIRONMENTS Some Theoretical Explorations

By Richard Levins

One of the leading explorers in the field of integrated population biology considers the mutual interpenetration and joint evolution of organism and environment. Environment is treated abstractly as pattern: patchiness, variability, range, etc. Populations are studied in their patterns: local heterogeneity, geographic variability, faunistic diversity, etc. *Monographs in Population Biology*, 2.

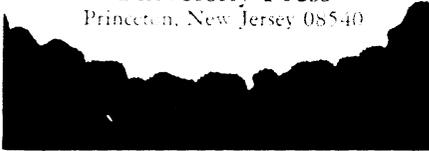
Cloth, \$6.50; Paper, \$3.25

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By Harold E. Blum

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for the group of pituitary glycoprotein hormones, TSH, luteinizing hormone (LH or ICSH), and follicle-stimulating hormone (FSH), than for any of the other pituitary hormones, and questions can still be raised concerning the purity of present preparations. The complete review of the chemistry of mammalian thyrotropins (TSH) by P. G. Condliffe (Paris and Bethesda) and by J. G. Pierce and his collaborators (Los Angeles) was thus very useful. With a few exceptions (concerning the possible presence of tryptophan and glucose in bovine TSH) the analytical data from the two laboratories were in reasonable agreement, but the two speakers currently hold different views concerning the important question of whether the native TSH molecule (with a molecular weight of approximately 25,000) consists of subunits. The findings of Condliffe concerning the behavior of reduced carboxymethylated TSH during gel filtration suggest that TSH may be analogous to LH in that more than one peptide chain may be present (see below); however, the end-group and sedimentation-equilibrium data of Pierce and co-workers point toward a single peptide chain with a molecular weight of 25,000. Analyses of the fractions obtained by gel filtration should solve the apparent discrepancy. Double-diffusion studies showed various degrees of immunoreactivity among thyrotropins of different mammalian species, but none was found between LH and TSH by this technique. However, with their radioimmunoassay system, G. Rosselin, P. Freychet, and J. Dolais (Paris) stated that some common immunological sites are shared by gonadotropins and TSH, as reported by others.

Y.-A. Fontaine (Paris) considered the zoological specificity of thyrotropins, reporting the inability of hypophysial extracts from eels to stimulate mouse thyroid gland or sheep isolated thyroid cells, whereas both mammalian (bovine) and eel material can stimulate the trout thyroid. However, if fish TSH (carp) is used in very large quantities, mammalian thyroids will respond, but the activity on mammals is about 1/300 that observed on the trout. Lungfish material affects both mouse and trout thyroids much as does bovine TSH. An inherent thyrotropic activity (that is, heterothyrotropic) of mammalian gonadotropins in fish is apparent.

M. Jutisz and P. de la Llosa (Paris) reviewed their work on the separation of two subunits in the gonadotropin

LH by urea, guanidine, or acid (pH 3), and their recombination into an active molecule, an achievement which has also been reported by Papkoff and Samy. Luteinizing hormone is beginning to yield some significant sequence data (Ward, Papkoff), but these were not discussed. Some disagreement still exists among workers on mammalian LH's even with respect to composition, with considerable discrepancies noted in the values for carbohydrate content.

A. V. Nalbandov (Urbana) expressed his belief that in higher vertebrates FSH and LH were either released together (revival of an old idea) or formed a complex in the blood which acted on the target tissues. The need for more than mammalian FSH and LH to promote ovarian maturation in the chicken points either to a possible essential third gonadotropin, serving as a factor maturing the follicle, in the chicken pituitary, or to a recognized chicken gonadotropin which has this function as well. The activities of gonadotropins from and in other vertebrate groups were considered at some length. A particularly interesting report on the purification and properties of a gonadotropin from carp was given by F. Burzawa-Gerard (Paris). This material, which gives excellent responses in several biological assays in lower vertebrates, does not elicit any responses in standard tests for mammalian gonadotropins such as the Parlow and Steelman-Pohley assays. Its composition is significantly different from that of any known mammalian gonadotropin.

I. I. Geschwind (Davis) marshaled the evidence for the existence of four major families of hormones: the neurohypophysial hormones, the ACTH-MSH-LPH complex, the glycoprotein hormones, and growth hormone-prolactin. Except for the first group, neither the amino acid sequence of any non-mammalian pituitary hormone, nor of any glycoprotein hormone or prolactin, has been elucidated, and therefore it would be premature to attempt to develop lines of molecular evolution for these hormones. The proceedings of the colloquium will be published by the French National Center for Scientific Research.

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