sumption that less energy is necessary to move several molecules out of their places in the three-dimensional lattice than to move the same molecules singly. The melting behavior of the material in bulk is determined by cooperative phenomena connected with the long-range order of the molecules in the solid state, whereas the behavior of the surface seems to depend more on the interaction of the neighboring molecules only.

The great importance of the surface of a solid body in all its communications with its surroundings makes surface research a vital part of our endeavor to understand the physical behavior of solid matter. The new possibility of observing the behavior of the topmost molecular layer of solids by radioautographs will be beneficial to a wide variety of experimental research and theoretical discussion. The application of this method on the observation of the phase transition is an example. It confirmed earlier observations of the melting phenomena of a surface in a more direct way.

References

1. PATRICK, W. A., and KEMPER, W. A. *J. Phys. Chem.*, **42**, 381 (1938).
2. HÜTTIG, G. F. *Kolloid-Z.*, **98**, 263 (1942); LICHTENECKER, K. *Z. Elektrochem.*, **48**, 601 (1942).
3. STRANSKI, I. N. *Z. Physik*, **119**, 22 (1942).
4. BEISCHER, D. E. *Science*, **112**, 535 (1950); *Surface Diffusion of Radioactive Monolayers and a New Method of Detecting Active Patches and Surface Cracks.* U. S. Naval School of Aviation Medicine, Pensacola, Fla. Project NM-001-059.16, Rept. 7, (Dec. 30, 1951).
5. BLODGETT, K. B. *J. Am. Chem. Soc.*, **57**, 1007 (1935).
6. LENNARD-JONES, J. E., and DEVONSHIRE, A. F. *Proc. Roy. Soc. (London)*, A, **169**, 317 (1939).
7. ADAM, N. K. *The Physics and Chemistry of Surfaces.* London: Oxford Univ. Press (1941).

Manuscript received January 25, 1952.

Comments and Communications

Zoological Nomenclature

NOTICE is hereby given that, as from October 15, 1952, the International Commission on Zoological Nomenclature will start to vote on the following cases involving the possible use of its plenary powers for the purposes specified in brackets against each entry. Full particulars of these cases were published on April 15, 1952, in the *Bulletin of Zoological Nomenclature,* those relating to cases (1) to (4) in Part 5 of Vol. 6, those relating to cases (5) to (18) in Parts 7/8 of Vol. 7.

1) Meigen, 1800, *Neuvelle* classification [suppression].
2) *Lysippe* Kinahan, 1858 (Class Crustacea) [validation].
3) *Cummingella* Reed, 1942 (Class Trilobita) [designation of type species].
4) *Dionide* Barrande, 1847 (Class Trilobita) [validation].
5) Vol. 1 of Cramer's *Uitl. Kapellen*: Schiffermüller's "Wiener Verzeichniss;" Fabricius' *Syst. Ent.*; Vols. 6 and 7 of the *Naturforscher*. [relative to priority for names of butterflies in].
6) *Naucoris* Geoffroy, 1762 (Class Insecta, Order Hemiptera) [validation].
7) *geoffroyi* Leach, 1817 *Corixa* (Class Insecta, Order Hemiptera) [validation].
8) Sand crab [trivial name for].
9) *Acmaea* Eschscholtz, 1833, and *Acmea* Hartmann, 1821 (Class Gastropoda) [settlement of problem relating to].
10) *Petalifera* Gray, 1847 (Class Gastropoda) [validation, if name found invalid].
11) *punctata* Cuvier, 1803, *Aplysia* (Class Gastropoda) [validation].
12) *Ammonia* Brünnich, 1771 (Class Cephalopoda or Rhizopoda) [suppression].
13) *Encrinus* Schulze, 1760 (Class Crinoidea) [validation].
14) and 15) *Archaeocidaris* McCoy, 1844, and *Pholidocidaris* Meek & Worthen, 1869 (Class Echinoidea) [validation].
16) *Eriechinus* Pomel, 1883 (Class Echinoidea) [suppression].
17) *Odobenus* Brisson, 1762 (Class Mammalia) [validation].
18) *Chinchilla* Bennett, 1829 (Class Mammalia) [determination of type species].

Comments on the above cases should be sent as soon as possible to Francis Hemming, Secretary to the Commission, 28 Park Village East, Regent's Park, London, N. W. 1, England.

FRANCIS HEMMING

Secretary to the International Commission on Zoological Nomenclature

Salivary Amylase Inhibition

SEVERAL papers have appeared recently describing an inhibition of salivary amylase by indole derivatives (*1, 2*) and several plant hormones (*3, 4*). This was rather surprising to us, for during our study of the crystalline amylases (*5–7*) incidental work was done in the presence of similar substances without any observable effect. We therefore thought it necessary to clarify this point.

Both crude human saliva and crystalline human salivary α-amylase (*6*) have been used. The amylolytic power has been determined at 20° C by a reductometric method (*8*), using Sumner's 3–5 dinitrosalicylic acid (*9*), as well as by a method based on the change of color of the starch-iodine complex (*10*). The latter method, however, is not suitable in the presence of indole derivatives, as these compounds use up the iodine, a large excess of which must therefore be added. The substrate, a 1% solution of Zulkowski starch,[1] was buffered at pH 6.90, and the determination made in presence of 0.0067 *M* NaCl. The following substances have been tested for their influence

[1] Prepared in our department by R. Menzi.

on the amylolytic action, in concentrations ranging from 0.01 to 0.0001 *M* (covering approximately the range of concentrations used by the previous authors): tryptophane, proline, nicotinic acid, β-indole acetic acid, β-indole propionic acid,[2] α-naphthalene acetic acid,[3] and 1–4 dichlorophenoxyacetic acid.[4]

None of these compounds has shown the slightest inhibiting power under the above-mentioned conditions. It is therefore certain that human amylase is not inhibited by the indole derivatives and other plant hormones that have been mentioned.

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References

1. TURNER, N. C., and CRANE, E. *J. Dental Research*, **23**, 413 (1944).
2. TURNER, N. C., and CROWELL, G. E. *Ibid.*, **26**, 99 (1947).
3. VOLKER, J. F., and MURRAY, D. P. *Tufts Dental Outlook*, **21**, (2), 3 (1947).
4. VOLKER, J. F. *Science*, **112**, 61 (1950).
5. FISCHER, ED. H., and BERNFELD, P. *Helv. Chim. Acta*, **31**, 1831 (1948).
6. MEYER, K. H., *et al. Ibid.*, 2158.
7. FISCHER, ED. H., DUCKERT, F., and BERNFELD, P. *Ibid.*, **32**, 1060 (1950).
8. NOELTING, G., and BERNFELD, P. *Ibid.*, **31**, 286 (1948).
9. SUMNER, J. B. *J. Biol. Chem.*, **62**, 287 (1925); **65**, 393 (1925).
10. BERNFELD, P., and FULD, M. *Helv. Chim. Acta*, **31**, 1420 (1948).

[2] All the preceding substances are pure biochemicals from Hoffmann-La Roche Inc., Basel.
[3] Prepared in our department.
[4] From American Chemical Paint Co., Ambler, Pa.

Isolation of Ascorbic Acid and Rhamnosides from Sea Water

THE presence in sea water of a substance that is physiologically active in oysters and that can be measured photometrically with *n*-ethyl carbazole has been reported by Collier, Ray, and Magnitzky (*1*). Comparison of the *n*-ethyl carbazole absorption spectrum formed in sea water with spectra of pure carbohydrates led to the conclusion that more than one carbohydrate was taking part in the determination. Methods to isolate and identify the compounds were then sought.

The carbohydrates were removed from sea water onto a column of activated charcoal, as described by Whistler and Durso (*2*). They were then removed from the column by elution with ethanol. Evaporation of the eluate gave two white crystalline compounds, which were separated by their different solubilities in 50% ethanol. The substance that precipitates in 50% ethanol, as yet unidentified, gives some indication of being a rhamnoside.

Evaporation of the alcohol-water mixture produced a crystalline compound which, in water solution, gave an ultraviolet absorption spectrum similar to that reported for dehydroascorbic acid by Herbert, Hirst, Percival, Reynolds, and Smith (*3*).

In order to study the similarity between the absorption spectra more closely, we prepared a solution of dehydroascorbic acid by oxidizing ascorbic acid in the presence of Cu ++. The absorption spectrum of this oxidation product agreed very closely with that of our compound from sea water, both in water and in 79% H_2SO_4. The colors resulting from the reaction of the oxidized ascorbic acid and from our sample with 2,4-dinitrophenyldydrazine exhibited the same spectra. The amount of sample available was too small to allow any extensive recrystallization and, therefore, any comparison of melting points with those reported in the literature was not feasible.

Absorption spectra from samples of sea water taken in various parts of the Gulf of Mexico agreed closely with the spectra we had run on oxidized ascorbic acid. We concluded from these curves that the vitamin is present in the sea largely in the form of dehydroascorbic acid. The amounts of vitamin as shown by the absorption spectra did not agree with the calculated amounts of carbohydrate found by the *n*-ethyl carbazole method. The discrepancy is probably due to the as yet unidentified "rhamnoside," which shows some color with *n*-ethyl carbazole. This "rhamnoside" is by far the most abundant carbohydrate in sea water. We have found concentrations as high as 0.1 g/l of the "rhamnoside" from inshore waters.

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References

1. COLLIER, A., RAY, S., and MAGNITZKY, W. *Science*, **111**, 151 (1950).
2. WHISTLER, R. L., and DURSO, D. F. *J. Am. Chem. Soc.*, **72**, 677 (1950).
3. HERBERT, R. W., *et al. J. Chem. Soc.*, 1270 (1933).

Experts' Biases about the Older Worker[1]

IN OUR industrial economy, which is characterized by rapid technological change, increasing mechanization, and increasing specialization, youth and speed are at a premium. The overemphasis on youth is accompanied by a corresponding underestimation of age, with the result that individuals are fearful about aging. This value system has given rise to complaints and erroneous beliefs about the abilities, skills, and personality structure of the older worker.

During the past year the attitudes of several groups toward the older worker were investigated. The groups differed in age, educational background, and socioeconomic status, and they included undergraduate students, graduate students, middle-aged nonprofessional workers and their wives, and retired men and women living in the community and in homes for the aged. Attitudes were measured by their agreement or disagreement with a questionnaire of 51 statements about the older worker. Some of the statements covered physical decline; others covered mental decline; still

[1] Retirement and Adjustment Series: Number 9. Sponsored cooperatively by the Institute of Adult Education and the Institute of Psychological Research, Teachers College, Columbia University.