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®

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Winter Cover

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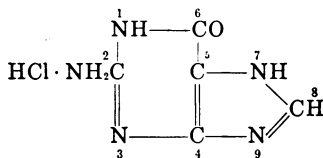
Tales of the more than 3500

EASTMAN ORGANIC CHEMICALS

In Act IV, Scene 1 of *Macbeth* the weird sisters gather 'round the cauldron to work a reaction and catalog such items of medieval biochemistry as eye of newt and baboon's blood. Reminds us in a way of certain chemical spare parts of the life process to be found in various brown stock bottles in our own stockrooms.

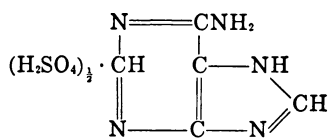
For example, our various modifications of purine:

Guanine Hydrochloride (Eastman 1606), which takes its name from the Spanish word for the droppings of seafowl, crops up (without the convenient HCl handle, of course) in many situations where the substance of flora and fauna is chemically disassembled. We can obtain this 2-amino-6-oxypurine either from fish scales found at the bottoms of barrels



that stand picturesquely on old New England wharves or as a by-product from the isolation of adenine. It is of some commercial importance as an ingredient of pearly lacquers.

Adenine itself we might obtain from glandular tissue or from tea, but we choose to make it from the nucleic acid in brewer's yeast. We



sell it as *Adenine Sulfate* (Eastman 1645).

In nature the enzyme adenase deaminates adenine to 6-oxypurine and when this takes on water it becomes 2,6-dihydroxypurine, otherwise known as *Xanthine*, which is present in muscles, spleen, and urine and

which we carry in highly purified crystalline form as Eastman 1644. One more oxygen in the 8 position of the purine structure gives *Uric Acid*, one of the principal constituents of kidney stones, available from us as purified crystals (Eastman 544).

When a pair of methyl groups attach themselves at the 3 and 7 positions of the xanthine molecule, it rises in the esthetic scale and becomes *Theobromine*. This contains no bromine, of course, but gets its name from a combination of Greek roots implying "food for the gods" because it is the principal alkaloid of chocolate. With us it's Eastman 1690.*

One more methyl group, attached at the 1 position through the metabolism of certain semi-tropical shrubbery, brings us to the beloved alkaloid *Caffeine* (Eastman 355)* and the end of our present line of purines.

Or take our indoles:

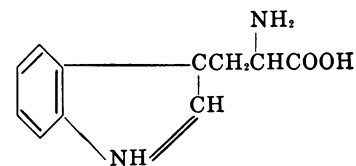
Indole (Eastman 2773), the parent compound, is found in jasmine and in animal excrement. When a methyl group clings at the 3 position, you have *Skatole*, the most fundamentally unpleasant of all the stenches we keep in bottles. (As a precaution in case of accident, we have assigned *Skatole* to

*Though *Theobromine* and *Caffeine* have pharmaceutical uses (as diuretics, among other applications), we sell them for chemical purposes exclusively and only on written assurance that they will not be used or resold as drugs or food.



a chemist who happens to be olfactorily totally blind and deaf—a valuable man.) Despite its central role in scatology, *Skatole* is also a fixative in fine perfumery. Where in the misty seas between psychophysics and psychoanalysis lies the explanation of this dichotomy, we know not.

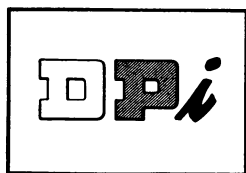
Both indole and skatole are breakdown products of the essential amino acid *L-(-)-Tryptophane*. This, too, we



stock as Eastman 2025. (At less than half the price we can also supply *DL-Tryptophane* (Eastman 5578).)

One aspect of indole chemistry that would surely have interested the sisters is represented by *3-Indoleacetic Acid* (Eastman 4271), *3-Indolepropionic Acid* (Eastman 2530), and *3-Indolebutyric Acid* (Eastman 4275)—auxins all. They would have enjoyed using them to confound a bean sprout trying to get itself properly pointed between light and darkness. Whether they would have had similar interest in *1,3-Dimethylindole* (Eastman 5331) and *3-(2-Aminoethyl)indole Hydrochloride* (Eastman 2954) is open to speculation.

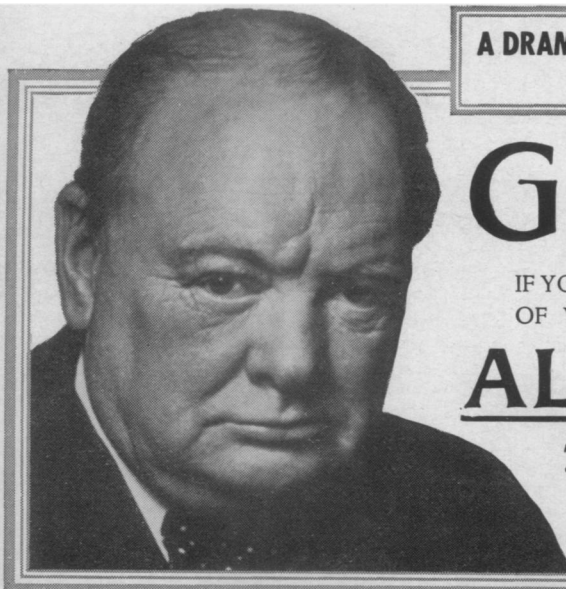
These purified purines and indoles, as analytical standards or weapons for deep probing into the nature of life, are a random few of the more than 3500 compounds you can order from the catalog of Eastman Organic Chemicals. If you need a copy, write *Distillation Products Industries*, Eastman Organic Chemicals Department, Rochester 3, N. Y.



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