should be completed with reference to my lecture delivered before the Hungarian Medical Association on March 18, 1932. In this lecture the identity of Vitamin C and the "hexuronic acid," described by myself in 1928, was definitely stated and experimental evidence given. This lecture was reported by all journals publishing the proceedings of that society.[2] The text of this lecture was published unchanged in the *Deutsche Med. Wochenschrift* (No. 22, 1932). This paper was followed by the note of King and Waugh in SCIENCE of April 1, and the two notes of Svirbely and Szent-Györgyi in *Nature* of April 16 and May 7.

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REPORTS

FULL TEXT OF THE NEW ORGANIC NOMENCLATURE RULES

IN 1930 the International Committee on the Reform of the Nomenclature of Organic Chemistry adopted a Definitive Report, which was published in various journals.[1] In that report Rules 34 and 49 merely stated that the topics to which they referred would be considered later. A translation of the new official French text of these rules as adopted tentatively by the committee at Lucerne in 1936 is here given. Any one having criticisms should communicate with me as early as possible in order that these may be considered by the American committee before the meeting of the International Union of Chemistry in Rome next May. Other organic nomenclature matters that may come up at the Rome meeting are: cyclic compounds with side chains containing functional groups; deuterium compounds; radical names; numbering of ring systems. Proposals regarding any of these topics should also be made soon.

RULE 34

a. Derivatives of hydrogen arsenide, AsH_3, will be named like the amines and their derivatives, with the ending *arsine*. The univalent radical $-AsH_2$ will be designated by the prefix *arsino*.

Examples: CH_3AsH_2, methylarsine; $(CH_3)_3As$, trimethylarsine; $(CH_3)_2AsCl$, chlorodimethylarsine; $(CH_3)_3AsO$, trimethylarsine oxide; $H_2AsCH_2CH_2AsH_2$, 1, 2-diarsinoethane or ethane-1, 2-diarsine; $(C_2H_5)_4AsOH$, tetraethylarsonium hydroxide; $(CH_3)_2AsAs(CH_3)_2$, tetramethylbiarsine.

b. Acids of the types $RHAs(:O)OH$ and $RR'As(:O)OH$ will be named *arsinic* acids; those of the type $RAs(:O)(OH)_2$ will be named *arsonic acids*. The radical $>AsO_2H$ will be designated by the prefix *arsinico*, the radical $-AsO_3H_2$ by the prefix *arsono*.

Examples: $(CH_3)_2AsO_2H$, dimethylarsinic acid; $C_6H_5AsO_3H_2$, benzenearsonic acid.

c. Rules *a* and *b* are applicable to the analogous compounds of phosphorus and antimony, the syllable "ars" being replaced respectively by *phosph* or *stib*.

d. The following list includes the prefixes and suffixes applicable to the most common compounds of phosphorus, arsenic and antimony:

Radical	*Prefix*	*Suffix*
$-AsH_2$	arsino	arsine
$-AsO$	arsenoso	
$-AsO_2$	arso	
$>As(:O)OH$	arsinico	arsinic
$-As(:O)(OH)_2$	arsono	arsonic
$-As=As-$	arseno	
$-PH_2$	phosphino	phosphine
$-PO$	phosphoroso	
$-PO_2$	phospho	
$>P(:O)OH$	phosphinico	phosphinic
$-P(:O)(OH)_2$	phosphono	phosphonic
$-P=P-$	phosphoro	
$-P=N-$	phosphazo	
$-P=As-$	phospharseno	
$-SbH_2$	stibino	stibine
$-SbO$	stiboso	
$-SbO_2$	stibo	
$>Sb(:O)OH$	stibinico	stibinic
$-Sb(:O)(OH)_2$	stibono	stibonic
$-Sb=Sb-$	antimono	
$-Sb=As-$	stibarseno	

e. Derivatives of bismuthine, BiH_3, will be named like the arsines.

f. Compounds of arsenic, phosphorus, antimony and bismuth which can not be named clearly by the preceding rules will be named as derivatives of arsines, phosphines, stibines or bismuthines or (if possible) as organometallic derivatives (rule 48).

Examples: CH_3BiO, methylbismuth oxide; CH_3SbCl_4, methylantimony tetrachloride; $(C_6H_5)_2AsOC_2H_5$, ethoxydiphenylarsine; $(CH_3)_2AsOH$, hydroxydimethylarsine or dimethylarsenic hydroxide; CH_3SbS, methylantimony sulfide; $[(CH_3)_2As]_2O$, bis(dimethylarsenic) oxide or cacodyl oxide.

RULE 49*a*

I. Cyclic hydrocarbons with aliphatic side chains are to be named according to one of the two following methods: (α) The radical names denoting the side chains are prefixed to the name of the cyclic hydrocarbon. (β) The cyclic hydrocarbon residue, if it can be named as a radical, is considered a substituent of the aliphatic chain.

Naming according to (α) is in general preferable when the side chain is short or when several side chains are present. Naming according to (β) is more convenient when the side chain is long, and particularly when the cyclic hydrocarbon residue is not at the end of this chain.

Examples: (α) $C_6H_5C_2H_5$, ethylbenzene; $CH_3C_6H_4C_2H_5$, methylethylbenzene; $C_{10}H_7CH:CH_2$, ethenylnaphthalene.

(β) $CH_3CH(C_6H_5)(CH_2)_5CH_3$, 2-phenyloctane;

[2] *Vide, e.g., Orvosi Hetilap,* 76: 259, 12, from March 26, or *Monatshefte Ungarisher Mediziner,* etc.

[1] See, for example, *Jour. Am. Chem. Soc.,* 55: 3905–25, 1933.

p-$(CH_3)_2CHC_6H_4CH(CH_3)CH(CH_3)(CH_2)_3CH_3$, 3-methyl-2-(4-isopropylphenyl)heptane.

For naming cyclic hydrocarbons with side chains according to (α), it is advisable in many cases to use the common names of simple aromatic hydrocarbons.

Examples: o-$CH_3C_6H_4C_2H_5$, 2-ethyltoluene; $(CH_3)_2C_6H_4CH:CH_2$(1,3,2), 2-ethenyl-m-xylene; $CH_3C_6H_3(C_2H_5)CH(CH_3)_2$(1,2,4), 2-ethyl-$p$-cymene.

II. When several cyclic hydrocarbon residues are united by an aliphatic chain the name of the compound will be derived from that of the aliphatic hydrocarbon, provided radical names are available for the cyclic hydrocarbon residues.

Examples: $C_6H_5CH_2C_6H_5$, diphenylmethane; $C_6H_5CH_2CH(C_6H_5)(CH_2)_2CH_3$, 1,2-diphenylpentane.

If this is not the case, or if the possibility of using a convenient radical name makes it desirable, the name of the compound will be derived from that of one of the cyclic hydrocarbons, on the principle of substitution.

Examples: $C_{14}H_9CH_2C_6H_5$(2), 2-benzylanthracene (better than phenyl-(2-anthryl)methane); $C_{16}H_9CH_2CH_2C_6H_5$, (β-phenylethyl)pyrene.

RULE 49*b*

When the cyclic hydrocarbons treated of in rule 49*a* carry functions which can be expressed only by a prefix, the same possibilities for names exist as those indicated in rule 49*a*.

Examples: $C_6H_5CHClCH_2Cl$, 1,2-dichloro-1-phenylethane or (α, β-dichloroethyl)benzene; $C_6H_5CH_2CH-CH_3)CH_2Cl$, 3-chloro-2-methyl-1-phenylpropane or (γ-chloroisobutyl)benzene; p-$ClC_6H_4CH_2CH_2Cl$, 4-chloro-1-(β-chloroethyl)benzene or 2-chloro-1-(4-chlorophenyl)ethane.

For naming derivatives of monocyclic hydrocarbons which have common names, it will be of advantage to employ these names.

Examples: p-$ClC_6H_4CH_3$, 4-chlorotoluene (4-chloro-1-methylbenzene); p-$ClC_6H_4CH_2Cl$, 4,ω-dichlorotoluene (4-chloro-1-(chloromethyl)benzene, 4-chlorobenzyl chloride); $CH_3C_6H_4(NO_2)CH(CH_3)_2$(1,2,4), 2-nitro-$p$-cymene (2-nitro-1-methyl-4-isopropylbenzene).

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SPECIAL ARTICLES

TOBACCO SMOKING AND LONGEVITY[1]

IN the customary way of life man has long been habituated to the routine usage of various substances and materials that are not physiologically necessary to his continued existence. Tea, coffee, alcohol, tobacco, opium and the betel nut are statistically among the more conspicuous examples of such materials. If all six are included together as a group it is probably safe to say that well over 90 per cent. of all adult human beings habitually make use of one or more of the component materials included in the group. All of them contain substances of considerable pharmacologic potency if exhibited in appropriate dosage. Widespread and long-continued experience, however, has shown that the moderate usage of any of these materials, if measurably deleterious at all, is not so immediately or strikingly harmful physiologically as to weigh seriously against the pleasures felt to be derived from indulgence, in the opinion of vast numbers of human beings. The situation so created is an extremely complex one behavioristically, and not a simple physiological matter, as it is sometimes a little naively thought to be. Purely hedonistic elements in behavior, which are present in lower animals as well as in man, have a real importance. Indeed they frequently override, in their motivational aspects, reason as well as purely reflex physiological inhibiting factors. There are undoubtedly great numbers of human beings who would continue the habitual use of a particular material they liked, even though it were absolutely and beyond any question or argument proved to be somewhat deleterious to them. Most of them would rationalize this behavior by the balancing type of argument—that the keen pleasure outweighed the relatively (in their view) smaller harm.

The student of longevity is not primarily interested in the behavioristic aspects of the situation under discussion. His concern is to appraise quantitatively, with the greatest attainable accuracy, the effect of each of these habitual usages upon the duration of life. This problem is necessarily statistical in its nature, for in the ordinary way of usage the effect upon longevity of any of the materials mentioned is not sufficiently strong or immediate to be disentangled in the individual from the effects of other and more powerful factors that are involved, such as infections, for example. An approximate evaluation of the statistical effect of these minor and secondary factors influencing longevity can, however, be reached by the application of actuarial methods (life table construction) to groups of individuals. For the maximum effectiveness of this methodology in the premises, the groups to be compared should be each as heterogeneous or random as possible in their compositions relative to all other characteristics *except* the one of degree of habitual usage of the particular material under discussion, and as homogeneous

[1] From the Department of Biology, School of Hygiene and Public Health, Johns Hopkins University, Baltimore, Maryland. This paper constitutes No. VII in the writer's series of "Studies on Human Longevity." The writer is indebted to Dr. John R. Miner for computational aid.