Such observations are the sole evidence that the normal reactions of the blood can suffer substantial change, even for a few hours.

Secondly, according to Fischer's measurements, these variations of p_H which Michaelis has observed in the venous blood of nephritics, diabetics, etc., involve a change of swelling of gelatin plates of less than 2%. Fischer's estimate of a 50% change of volume is therefore illusory and his further remarks are irrelevant.

Professor Fischer must demonstrate very much wider variations of hydrogen-ion concentration than are now known to occur within the organism or very much greater changes in swelling within physiological ranges than are now known, before there can be any ground for accepting his theories.

This is not the place to enter upon a discussion of the physiology of respiration or the changes in volume of the blood corpuscles. But in order to avoid misunderstandings I venture to say that Fischer's interpretations of both phenomena seem to me contrary to the evidence.[1]

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NOTES.

Rapid Organic Combustions of Substances Containing Nitrogen.—In a note "On Rapid Organic Combustions"[2] the use of cerium dioxide as a catalyst deposited on asbestos was supplemented by cupric oxide, and it was shown that by the addition of the lead peroxide-minium mixture the method could be used for determining carbon and hydrogen in substances containing nitrogen also. The lead peroxide which was obtained by us was found to be very unsatisfactory, and this same trouble was mentioned recently by Wise in connection with the micro method.[3] At first we abandoned the use of the lead peroxide altogether, and by keeping the latter part of the cupric oxide at a comparatively low temperature some fair results were obtained. When, however, a very active catalyst was used a large amount of nitric acid was formed and in one series of experiments the tube, after 8 runs, was finally completely clogged on account of the formation of a basic copper nitrate. The lead peroxide mixture is usually placed about 5 cm. beyond the cupric oxide and must be kept at about 300–320°[4] in order to avoid the decomposition of any lead nitrate formed.[5] The

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[1] Cf. Haldane, J. S., "Organism and Environment as Illustrated by the Physiology of Breathing," New Haven, 1917; Barcroft, J., "The Respiratory Function of the Blood," Cambridge (England), 1914; Höber, R., "Physikalische Chemie der Zelle und der Gewebe," Leipzig, 1914.

[2] Reimer, THIS JOURNAL, **37**, 1636 (1915).

[3] Wise, *Ibid.*, **39**, 2055 (1917).

[4] Dennstedt, "Anleitung zur vereinfachten Elementaranalyse," III Aufl., p. 66, Hamburg, 1910.

[5] Lead nitrate decomposes rapidly at 357°. Baekeland, THIS JOURNAL, **26**, 391 (1904); Morgan, *J. Phys. Chem.*, **8**, 416 (1904). We could not find any specific data on the temperature of decomposition of the basic copper nitrates.

adjacent cupric oxide, therefore, is sometimes kept at a temperature which is not high enough to decompose the nitrate of copper that might be formed. This seems to be a serious objection in general to the use of cupric oxide in addition to the catalyst if it is expected that *several* combustions of substances containing nitrogen are to be made *unless* care is taken to make sure that any nitrate of copper is completely decomposed after each combustion by proper heating, by the entire renewal of the cupric oxide, or by extending the distance between the cupric oxide and the lead peroxide mixture so that *all* the cupric oxide can be heated to a dull red heat.

In our experiments the cerium dioxide was deposited on pumice of 12-mesh size. This has the advantage over asbestos in that the material then does not crumble and "sag."[1]

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Organic Chemicals Available at the University of Illinois.—During the past eight months a large number of organic chemicals, not available in the open market, have been manufactured at the University of Illinois. As the demand has been great, it has been impossible to keep many of them in stock at all times and at present not more than one-half of those that have been made are on hand.

This summer it is planned to have a staff of chemists extend the work, manufacturing not only the chemicals previously made but also still others for which the demand may be urgent. If it is possible to know beforehand the approximate amount of each compound that may be desired, great saving of time will result and the selling prices of the chemicals will be lowered. This note is written to urge laboratories which may be interested in any of the compounds mentioned below to write as soon as possible for quotations so that the raw materials in the correct amounts may be purchased without delay. Below are given three lists. First, chemicals now available in amounts from a few grams to 10 or more pounds. Second, substances for which the processes have been worked out but which are not in stock at the present time. Third, substances which it is hoped may be synthesized this coming summer. Quotations will gladly be given on any of the chemicals in Groups I and II, and in Group III a maximum price will be quoted wherever feasible.

If there are any substances not included in these lists which are badly needed by any technical or university laboratory, the manufacture of such will be considered, provided the preparations are not too long and difficult, and provided the demand is sufficient to warrant the labor involved.

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[1] Since the above was written the excellent article "On Rapid Organic Combustions" by Levene and Bieber, THIS JOURNAL, 40, 460 (1918) was published. In conversations with one of us, Prof. Reimer and Dr. Levene also urged the publication of the above.

Group I.—Chemicals Now Available.

Acetyl bromide
Amylene
Anisol
Benzamide
Benzanilide
Benzenesulfonyl chloride
Benzilic acid
Benzil
Benzoin
Benzoyl chloride
Benzyl bromide
Benzyl cyanide
Bromoacetyl bromide
α-Bromonaphthalene
Butyl alcohol (normal)
o-Bromotoluene
p-Bromotoluene
Caprylic alcohol
Chloroacetic anhydride
Chloroacetyl chloride
Chlorocarbonic ester (ethyl)
Chloropicrin
o-Chlorotoluene
p-Chlorotoluene
p-Dibromobenzene
Dichlorohydrin
Dimethylglyoxime
Diphenylcarbamine chloride
Diphenyl ether
Epichlorohydrin
Ethyl iodide
Fluorescein
Furfurol
Glycol
Glycol diacetate
Hippuric acid
Iodine monobromide
β-Iodopropionic acid
Isoamyl bromide
Isoamyl ether
Isobutyl aldehyde
Magnesium, for Grignard
Malic acid
Malonic ester (ethyl)
Mesitylene
Methylamine hydrochloride
Methylethyl ketone
Methylene iodide
Methyl oxalate
p-Nitrobenzoic acid
Nitromethane
Oxalyl chloride
Piperidine
Salicylic aldehyde
Sodium nitroprusside
Tetranitromethane
Thionyl chloride
Trimethylene bromide
Trimethylene glycol

Group II.—Chemicals Which Will Be Available but Are Not Now in Stock.

Acetamide
Acetonitrile
o-Acetotoluid
p-Acetotoluid
Allyl alcohol
Allyl bromide
Azobenzene
Benzophenone
Benzoyl bromide
p-Bromoacetanilide
p-Bromoaniline
o-Bromobenzoic acid
p-Bromobenzoic acid
p-Bromophenol
Chinaldine
p-Chloraniline
o-Chlorobenzoic acid
p-Chlorobenzoic acid
Cupferron
Cyanacetic ester (ethyl)
Diethylmalonic ester (ethyl)
Dimethylamine hydrochloride
Dimethylaminobenzaldehyde
Ethyl oxalate
Glycocoll
Malonic ester (methyl)
Mercury dimethyl
Methyl iodide
Nitroso β-naphthol
Phenylacetic acid
Phenylacetic ester (ethyl)
Phenylalanine
Phenylisocyanate
Phloroglucin
Quinone
Thiophenol
Trimethylenechlorohydrin

Group III.—Chemicals Which Will Probably Be Prepared during the Summer.

Acetylene tetrabromide
Benzenesulfonamide
Benzylamine
Butyl aldehyde (normal)
Butyl bromide (normal)
Diethylamine
Diphenylhydrazine
Ethylamine hydrochloride
Formamide
Iodobenzene
Methylphenyl hydrazine
α-Naphthyl hydrazine
Naphthyl isocyanate
Ninhydrin
o-Nitrobenzaldehyde
m-Nitrobenzaldehyde
p-Nitrobenzaldehyde
p-Nitrobenzoyl chloride
Nitron
p-Nitrophenyl hydrazine
Oenanthol
Oenanthylic acid
p-Thiocresol
Triethylamine
Trimethylamine hydrochloride
Urethane
m-Xylene
o-Xylene
p-Xylene

Inquiries should be addressed as soon as possible to the Organic Chemical Division, University of Illinois. Roger Adams.

Urbana, Illinois.

NEW BOOK.

Notions Fondementales de Chimie Organique. Par Charles Moureau. Member de l'Institut et de l'Acadèmie de Médecine, Professeur au College de France. Cinquieme edition revue et consideralblement augmentèe. Paris: Gauthier-Villars, 1917. 20 Fr. VIII—548 pp.

The fourth edition of this book was published in 1913 and reviewed in This Journal, **36,** 1064. The fifth edition has been revised and increased by 165 pages.

The book is divided into five sections: I, Introduction and General Theories, 159 pages; II, Hydrocarbons, 54 pages; III, Oxygen Compounds, 166 pages; IV, Nitrogen Compounds, 70 pages; V, Organic-metallic Compounds, 5 pages; VI, Heterocyclic Compounds, 18 pages; VII, Dyes, 39 pages.

The method of treatment is rather radically different from that adopted in American and English text-books for beginners. In the introduction the author considers in detail the molecular and atomic theories, isomerism, valence, stereochemistry, optical activity, physical properties and the mechanism of reactions. The aim of the book seems to be to present general principles first and concrete examples later and rather sparingly. It is, perhaps, worth our while to enquire whether such a method has not considerable advantage from the pedagogical point of view and whether in our attempt to give facts first and theory later it does not sometimes happen that our students fail to see the forest because of the trees.

The numerous, brief historical references with dates are very welcome. In some cases the emphasis ought, perhaps, to be a little different, but