EDITORIAL NOTES

SODIUM CACODYLATE IN A MODIFIED DONOVAN'S SOLUTION.

E. Crouzel, in *Repertoire de Pharmacie,* 30, 129, 1919, proposes the substitution of sodium cacodylate for the arsenious oxide employed in the French formula. It is contended that a more stable preparation results; the quantities of the constituents are, one gramme each of sodium cacodylate, potassium iodide and mercuric iodide and 97 grammes of water.

ISOTONIC SOLUTIONS FOR HYPODERMIC INJECTION.

v. Itallie (*Pharm. Weekbl.*) holds that the injurious by-effects, such as pain, etc., occasionally produced when applying alkaloidal solutions hypodermically, usually result from the solutions not being isotonic. He, therefore, recommends using only such solutions as have the average freezing point of human blood serum. This freezing point can either be estimated experimentally or can be calculated in the usual way. The amounts of sodium chloride necessary to be added to alkaloidal solutions of definite strength in order to obtain isotonic solutions are given as follows:

A 1 percent morphine hydrochloride solution requires the addition of 0.76 percent of sodium chloride.

A 1 1/2 percent morphine hydrochloride solution the addition of 0.69 percent of sodium chloride.

A 2 percent morphine hydrochloride solution, 0.62 percent of sodium chloride.

A 3 percent morphine hydrochloride solution, 0.48 percent of sodium chloride.

A 1 percent cocaine hydrochloride solution requires the addition of 0.74 percent of sodium chloride.

A 6 percent cocaine hydrochloride solution does not require any addition of sodium chloride.

A 1 percent novocain hydrochloride solution requires the addition of 0.69 percent of sodium chloride.

A 2 percent novocain hydrochloride solution, 0.51 percent of sodium chloride.

A 1 percent atropine sulphate solution requires the addition of 0.79 percent of sodium chloride.

A 1 percent emetine hydrochloride solution requires the addition of 0.82 percent of sodium chloride.

A 3 percent emetine hydrochloride solution, 0.68 percent of sodium chloride.

A 5 percent emetine hydrochloride solution, 0.45 percent of sodium chloride.

A 1/2 percent arecoline hydrobromide solution requires the addition of 0.80 percent of sodium chloride.—Through *Druggists Circular.*

THE FATE OF SALICYLATES IN THE BODY.

One of the fundamental requisites in the rational, as contrasted with the purely empiric, use of drugs is a knowledge of precisely what happens to them in the organism, as well as of what pharmacologic effects they exert. In the long run, the influence of a potent substance may depend not only on its immediate manifestations but also on delayed reactions due to accumulations of an active compound. Some foreign substances are very promptly excreted; others tend to be stored to a greater or less extent, so that they can manifest cumulative effects; still others are in some measure destroyed within the organism. Scientific therapy must be based on a knowledge of the fate of the drugs that it employs.

The older literature on the salicylates, one of the most widely used groups of therapeutic agents, gives the impression that the salicyl radical leaves the body virtually unchanged.[1] According to the more recent investigations of Hanzlik[2] and his collaborators at the Western Reserve University School of Medicine, however, about 20 percent of salicylate administered to normal human individuals is de-

[1] Nencki, M., *Arch. f. exper. Path. u. Pharmakol.,* 20, 367, 1886. Mosso, *Ibid.,* 26, 267, 1889.

[2] Hanzlik, P. J., Scott, R. W., and Thoburn, T. W., *J. Pharmacol. & Exper. Therap.,* 9, 247 (Feb.) 1917.

stroyed, since the loss cannot be accounted for in sweat and feces, or by retention in the body. According to the view of Hanzlik and Wetzel,[3] this destruction is not associated with any special organs, but appears rather to be dependent on the general functions of metabolism. It goes on in excised organs and apparently in tissue pulp. The power to destroy salicylates is by no means limited to the organs of the higher animals; for Hanzlik and Wetzel have recently ascertained that weak solutions of sodium salicylate gradually deteriorate unless they are protected from microbiotic forms by means of efficient antiseptics. Yeasts and fungi can destroy the drug.

If the destruction of the salicyl group is a function of metabolic activity in general, it might be expected that the disappearance of salicylates will be facilitated wherever metabolism itself is augmented. In harmony with such a hypothesis, Hanzlik and Wetzel note increased loss of administered salicylate in fevers, principally in rheumatism and tuberculosis. In nephritis, in which the retention of the drug because of diminished renal excretory capacity might expose it to a greater chance of destruction by the tissues, the theory seems to be confirmed by the observed facts. Drug habitués addicted to the use of alcohol and morphine were found to excrete much less salicyl than normal persons, owing perhaps to an acquired power of their organisms for increased destruction of drugs.

It is in fact familiar to therapeutics that a low concentration of salicyl in the blood and tissues which must be the result of smaller doses of salicylates and related compounds, is not an effective antiseptic within the body. The destruction of the drug may afford the reason for this and also indicate why large doses are required to secure therapeutic effects. —Editorial *J. A. M. A.*

THE ACIDITY OF CHAULMOOGRA OIL.

In a recent letter (*Pharmaceutical Journal*, August 23, p. 195) Mr. F. F. Shelly pointed out the wide divergence in the acidity of commercial samples of Chaulmoogra Oil, and showed that the limits set by the British Pharmacopoeia are unsatisfactory. In order to further elucidate this matter, a search was made in the literature on the subject, and a few experiments performed to determine the influence of the method of preparation, and of time, on the acidity of the oil.

A full account of the earlier work on Chaulmoogra is given by Lepage ("Papers on the Plant *Gynocardia odorata*," 1878), and reference to subsequent literature is made by Schindelmeister (*Deutsch. Pharm. Ges. Ber.*, 14, 164, 1904), but although many of these papers deal with the constituents of the oil, no information is given as to the amount of free acid present. The table below gives the acid value as found by later investigators:

Author.	Source.	Acid val.	Periodical.
Hirschsohn..	Cold-pressed	26.84	*Pharm. Centralbl.*, 44, 627, 1903
Hirschsohn..	Warm-press'd	25.54	*Pharm. Centralbl.*, 44, 627, 1903
Hirschsohn..	Extracted c. petrol ether.	21.14	*Pharm. Centralbl.*, 44, 627, 1903
Hirschsohn..	Commercial A	87.33	*Pharm. Centralbl.*, 44, 627, 1903
Hirschsohn..	Commercial B	34.44	*Pharm. Centralbl.*, 44, 627, 1903
Hirschsohn..	Commercial C	70.56	*Pharm. Centralbl.*, 44, 627, 1903
Hirschsohn..	Commercial D	37.60	*Pharm. Centralbl.*, 44, 627, 1903
Power and Gornall....	Expressed	23.0	*J. Chem. Soc. (Tr.)*, 85, 843, 1904
Power and Gornall....	Extracted	9.5	*J. Chem. Soc. (Tr.)*, 85, 843, 1904
Schindelmeister...	Cold-pressed	25.2	*Loc. cit.*
Reinsch.....	Commercial	25.04	*Chem. Zeit.*, 35, 77, 1911

Of the five commercial samples analyzed, it will be seen that only one has an acid value satisfying the b. p. requirements, but it should be mentioned that some of the oils analyzed by Hirschsohn may have been, and probably were, adulterated.

Further information on the subject is found in Evans' "Analytical Notes" (1910–1913), the values for the acidity of Chaulmoogra Oil therein given varying between 9.5 and 56.0.

A similarly wide range was observed in a few samples examined in the laboratories of the Society of Apothecaries; in the table below other analytical figures are given, besides the acidity, to show that the oils were genuine:

[3] Hanzlik, P. J., and Wetzel, N. C.: The Salicylates, XI, The Stability and Destruction of the Salicyl Group under Biological Conditions, *J. Pharmacol. & Exper. Therap.*, 14, 25 (Sept.) 1919.

No.	Source.	Acid value.	Iodine value.	M. Pt.
1	Expressed from seeds..	8.3	100.9	25–26°
2	Extracted from seeds..	7.7	98.3	24°
3	Commercial A.....	31.0	101.2	...
4	Commercial B.....	58.7	100.7	28°
5	Commercial C.....	52.9	96.8	...
6	Commercial D.....	18.5	101.8	25°
7	Commercial E.....	39.6	102.0	26°
8	Commercial F.....	76.7	100.3	31°

The seeds from which the first two oils were obtained had been imported from India, and their genuineness checked at the Royal Botanic Gardens.

The acidity of samples 1, 2, 4 and 6 was determined subsequently after the lapse of various periods of time, with interesting results:

	Acid Number.				
No.	When obtained.	After 2 weeks.	After 4 months.	After 8 months.	After 1 year.
1	8.6	8.6	9.2	....	19.2
2	7.7	...	...	....	10.1
4	18.5	...	...	22.1	....
6	58.7	...	...	....	61.4

These results show beyond doubt that *the acidity of the oil increases with time*, but the change is not regular. The increase in the acidity of Chaulmoogra oil on keeping had previously been observed by Marcon (*Thèse*, Montpellier, 1886), who remarks that the oil expressed in the cold keeps well, while the hot-expressed oil, as well as that obtained by maceration of the seeds in boiling water, soon becomes rancid.

As regards the influence of the method of preparation, oils extracted by means of solvents have, in general, a lower acidity than expressed oils. No investigation appears to have yet been made on the oil obtained by maceration of the seeds in hot water, although much of the commercial drug is possibly prepared in this way (cf. U. S. Dispensatory, p. 759, new ed.). In order to determine what influence this process has on the acidity of the oil, a quantity of seeds were crushed and boiled with water; the oil rose to the surface in the form of a coarse emulsion, from which it was extracted by means of ether. Its acid value was 15.6, as compared with 7.7 for the extracted and 8.6 for the expressed oil, from the same seeds.

In conclusion:

(1) The acidity of Chaulmoogra oil varies with time and with the method of preparation; it is, therefore, useless for purposes of identification.

(2) The limits set by the present Pharmacopoeia (British), are much too narrow and indefensible, seeing that no method is specified for the preparation of the oil; they should be altered or preferably left out altogether.

The above work was carried out in the Analytical Laboratories of the Society of Apothecaries (London). My thanks are due to Mr. F. F. Shelley, Ph.C. (Vic.), F.I.C., for initiating this investigation.—Victor Cofman, B.Sc. (London), M. P.S., in *Pharmaceutical Journal*, September 27,1919, p. 269.

DEATH OF JOHN CHARLES UMNEY, AN EX-PRESIDENT BRITISH PHARMACEUTICAL CONFERENCE.

J. C. Umney, president of the British Pharmaceutical Conference in 1913, died at his home (Berea Court, Yapton, Arundel, England), October 9, aged 51 years. His apprenticeship in pharmacy was served with William Martindale; he passed the Minor examination in 1889, the Major in 1890, in which year he also entered the Bloomsbury Square School of Pharmacy and here he received the bronze and silver medals in practical pharmacy. In a number of his researches he was engaged with Professor Dunstan, on the alkaloids of *Aconitum Napellus*, the salicylates, etc. In 1910, he established the *Perfumery and Essential Oil Record*, and he was the author of the monograph on essential oils in Thorpe's "Dictionary of Applied Chemistry." He contributed largely to the last revision of the British Pharmacopoeia. In 1914 he was awarded the Silver Medal of the Royal Society of Arts; other reference to honors and achievements might be made. At the time of his death he was member and director of Wright, Layman & Umney, Ltd.

NEW OFFICERS OF E. FOUGERA & CO., INC.

Upon the death of Mr. Louis V. Heydenreich, president of E. Fougera & Company, it became necessary to elect new officers and at a meeting held recently the following officers were chosen: Montaigu M. Sterling, President and General Manager; Charles M. Russell, Vice-President and Counsel; William H. Ball, Treasurer, Rudolph Wirth, Secretary.

Mr. Sterling has been the Secretary and Treasurer of the company since its incorporation; Mr. Ball has been associated for 37 years and was head of the Financial Department; while Mr. Wirth has spent 44 years of

his life with the concern, having been until recently Sales Manager.

DEATH OF WILLIAM MUENCH.

William Muench, well and favorably known druggist of Syracuse, N. Y., is dead. Deceased settled in Syracuse in 1867, engaging in the drug business. He was associated in other activities and interested in civic and fraternal organizations. In 1873 he married Elizabeth C. Baumer, who, with their eight children, survives. Mr. Muench joined the American Pharmaceutical Association in 1899.

MEMORIAL TO PROFESSOR BOWER T. WHITEHEAD.

The alumni of the School of Pharmacy presented to the South Dakota State College of Agriculture and Mechanic Arts, a bronze memorial tablet in memory of the late Bower Thomas Whitehead, the first Professor of this School of Pharmacy. The tablet was presented at the Commencement exercises on June 2, 1919, by Professor Serles, a former student and assistant of the deceased, and was received by Dr. G. L. Brown, acting President of the College.

W. G. Crockett, who since his discharge from the Chemical Warfare Service has been employed as a chemist with E. I. du Pont de Nemours & Co., Wilmington, Del., was recently elected professor of pharmacy in the College of Pharmacy of Baylor University, Dallas, Tex.

Ex-President and Mrs. Henry H. Rusby announce the marriage of their daughter Ruth to Mr. Maximilian von Hoegen. Members of the A. Ph. A. will learn of the event with much interest not only because of their esteem for the parents of the bride, but because the latter has been a visitor during several of the annual conventions.

Ernest E. Stanford, for some time connected with the Pharmacognosy Laboratory, Bureau of Chemistry, U. S. Department of Agriculture, is now professor of pharmacognosy in the Cleveland School of Pharmacy.

Verne C. Nichols, formerly professor in the pharmacy department of the University of Oklahoma, is now director of the Era Course in Pharmacy.

Arthur P. Schlichting, who has been professor of pharmacy in the North Dakota Agricultural College for several years, has been appointed assistant professor of pharmacy in the University of Michigan and will teach the same subjects formerly conducted by Dean Stevens.

M. Jadin, heretofore professor at Montpelier College of Pharmacy, France, has been nominated Director and Professor of Chemical Pharmacy at the Superior School of Pharmacy, Strasbourg. Professor Jadin was one of the vice-presidents of the International Congress of Pharmacy held in Paris in 1900. Professor Masson, Director of the Montpelier School of Pharmacy, has been nominated a Chevalier of the Legion of Honor.

Revision of the Codex is under consideration at the present time in France. M. Cabannes publishes some interesting suggestions. In his opinion a number of new medications should be included, among these sterilized camphorated oil for hypodermatic use. The question of extracts and the equivalent of extracts in tinctures and menstrua enter into the discussions relative to the revision; also the inclusion of statements relative to physiological action of medicaments. There seems to be a desire for a schedule of medicaments which can be supplied by pharmacists without prescriptions.

SOCIETIES AND COLLEGES.

THE EXPOSITION NUMBER OF THE CHEMICAL BULLETIN, CHICAGO.

The Exposition Number of the *Chemical Bulletin*, published by the Chicago Section, is one of the most elaborate efforts in chemical journalism ever undertaken by members of a local section. There are over one hundred pages of text and advertising matter, including complete programs of the Exposition and the meeting of the various scientific societies held in conjunction with the Exposition. Among the contributors are: W. H. Nichols, Chas. H. Herty, Julius Stieglitz, L. V. Redman, H. E. Howe, John Arthur Wilson, and many others. The vast amount of detailed work connected with the publication of this number must have demanded no small sacrifice from the editors.—*The Catalyst*, Philadelphia.

TO RESTORE BARTRAM'S GARDENS.

Bartram's Gardens, Philadelphia and the home there of the noted naturalist are to be