of this kind are quite unnecessary. They waste space as well as the reader's time and patience. If their inclusion is considered desirable the page-numbers should accompany them so that backward or forward search for an informative entry may be avoided. The tedious preparation of an index is frequently left to the publishers. Authors should take more responsibility for this useful part of their books.

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QUANTITATIVE ANALYSIS

Introduction to Quantitative Analysis. By SAUL B. ARENSON and GEORGE RIEVESCHL. New York: Thomas Y. Crowell Company. 1944. $2.75.

EVERY one has known the obstreperous sort of person who always manages a resounding back-slap and pumping right hand by way of greeting. This book is written in the style of such an over-friendly fellow. The second person is used, you, the reader or student, being addressed throughout the book. The analogies used are very homely: tea mixing, the distance and rate of travel between Akron and Cincinnati and similar examples are used to solve problems. Such analogies seem inconsistent with the chapters on electrochemical and neutralization theory, students capable of mastering the latter very probably being insulted by the former. Some of the many procedures listed probably are of doubtful value to the elementary student. For example, the determination of moisture in butter, alcohol in a beverage, free fatty acid in fats and oils, Al $(OH)_3$ in a medicinal preparation, vitamin C in vegetables and four volumetric methods for sulfate are listed. In all fairness, it should be stated that a sufficient number of other procedures are included, placing the above-mentioned experiments in the "optional" category.

On the positive side, the book seems to be a serious attempt to step out away from the stogy, time-honored and, in many cases, dull procedures to be found in the ordinary text on quantitative analysis. It is to be hoped that this book exerts an influence in such a direction on the field as a whole. An excellent series of problems is included, the book is well documented, and the variety of procedures exceeds any other book of comparable scope.

The physical make-up of the book follows war-time standards. Typographical errors are relatively few, but rather crucial. For example, the student is advised to take 25 ml of 3 per cent. H_2O_2 for N/10 permanganate titration, and 0.25 M "ferroin" is recommended as indicator for ceric sulfate titrations.

Quantitative Inorganic Analysis. By I. M. KOLTHOFF and E. B. SANDELL. Revised edition. New York: Macmillan Company. 1943. $4.50.

THIS revision of a well-known book brings it up to the times, the chapters on organic reagents, spectrophotometry, errors and precipitation phenomena being augmented and brought in line with the latest work in the field. A section on amperometric titrations has been added.

For a book with as wide a scope as this one, it seems regrettable that no mention is made of some of the modern theories of acid-base phenomena or of the fallacies inherent in ionic equations. It would seem to be less misleading to use molecular equations, obviously fallacious, than to use ionic equations containing, for example, Ti^{+4}, Fe^{+3}, Cr^{+3}, etc., which give an impression of correctness.

Many instructors will find the book too all-inclusive for a general elementary course, although it should be excellent when used as an elementary book for chemistry majors.

The physical make-up of the book is exceptionally attractive, being scarcely different from the pre-war product.

In general, the book is by far the best link between elementary and advanced quantitative analysis yet produced.

FREDERICK R. DUKE
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REPORTS

ARCTIC INSTITUTE OF NORTH AMERICA

A MEETING of Canadians and Americans interested in scientific research into Arctic problems met in Montreal on September 8 and completed plans for the early establishment of an Arctic Institute of North America, first reported in SCIENCE[1] in May of this year. The project was initiated at a similar meeting held in New York on May 13.

[1] SCIENCE, 99: 2578, 423, May 26, 1944.

The thinking of the organizing group has been broadly as follows:

Wide interest in the Arctic is being expressed at present in both Canada and the United States and a strong scientific and developmental movement in Arctic North America is expected to begin as soon as the war is over.

Despite the excellent reconnaissance studies accomplished by a number of exploring expeditions,

our detailed scientific knowledge of Arctic North America is comparatively slight. As a result the natural resources of Alaska, Arctic Canada and Greenland are far from completely developed, and full advantage has not been taken of the possibilities for living in that region.

The situation in the far northern part of this continent to-day is analogous in some respects to the situation in the undeveloped West in the middle of the last century. Many basic questions about the West were answered by the reports of scientifically organized surveys and by private exploration undertaken at that time in response to a widespread demand.

Questions of basic importance in a number of scientific fields can be solved only through studies undertaken in the Far North. Furthermore, carefully chosen scientific study can furnish a sound basis for the thoughtful planning upon which the development of North America's last frontier, the welfare of the people who live there now and the larger number of people who may be expected to live there in the future, should be built. A new, extended and independent program of scientific study of the North American Arctic therefore will not only contribute in a large way to the advancement of scientific knowledge, but will also constitute a broad public service of immediate practical significance.

The organizing group believes that such a study should be integrated with studies already under way and should be systematically designed to answer the major questions that must be answered before intelligent and orderly development of the Far North can be undertaken. It would necessarily involve:

(a) General research into the natural conditions of the North.

(b) Studies applied to specific problems of the development of the Arctic and of Arctic living.

(c) A broad study of the relationships of the Arctic regions to the physical, social and economic problems of the world as a whole.

It is intended that the scope of activities of the institute will include the collection and diffusion of information relating to the Arctic and Subarctic regions of North America. The work will be exclusively scientific. Fields of pure and applied research may include geologic studies; physical and chemical studies relating to geophysics, oceanography and meteorology including ionospheric and related phenomena; broad biological studies including animal and timber resources; social studies of the region including the history of early man in North America; agricultural possibilities; navigation, transport and communication; public health.

A constitution and tentative budget have been adopted. It is expected that the institute's personnel will consist of a small, full-time administrative staff headed by a director. An international group of men, many of them scientists, elected on a rotating basis for specific terms, will meet periodically with the full-time staff to consider specific research projects and to advise on the distribution and coordination of research effort. It is hoped that sufficient funds will be available to make, each year, a considerable number of research grants to qualified scientists irrespective of their principal professional affiliations.

The institute will be clearly North American, international in character and common to Canada, the United States, Newfoundland and Greenland. Within the North American Arctic the boundary between Alaska and Canada is entirely artificial, while that between Canada and Greenland is hardly less so as far as Arctic research is concerned. The basic scientific questions to be answered are common to the entire Arctic region. Accordingly, great economy of effort, avoidance of duplication of investigations and wider common discussion of problems would be secured by treating the North American Arctic as a region to be studied as a unit—the study to be for the common good of the people and states concerned. Such a unit treatment, if properly organized and administered, should have the further advantage of contributing largely to international good-will through a new kind of direct international cooperation.

It is expected that the offices of the institute will be established in Canada, probably in Montreal.

Funds for organizational expenses, pending the establishment of the institute as a research organization, have been generously contributed jointly by the National Research Councils of the United States and Canada.

The following persons were present at the recent organizational meeting:

Dr. A. Bajkov, Army Air Forces Personal Equipment Laboratory, Wright Field, Ohio.

Dr. E. G. Bill, Dartmouth College, Hanover, N. H.

Dr. S. W. Boggs, Chief, Division of Geography and Cartography, Department of State, Washington.

Dr. R. W. Boyle, National Research Council of Canada, Ottawa.

Dr. C. Camsell, Deputy Minister of Mines and Resources, Ottawa.

Dr. H. B. Collins, Ethnogeographic Board, Smithsonian Institution, Washington.

Dr. H. J. Deason, special assistant to the director of the Fish and Wildlife Service, Department of the Interior, Washington.

Major R. F. Flint, National Research Council of the United States; Arctic, Desert and Tropic Information Center, Army Air Forces, New York.

Dr. L. M. Gould, National Research Council of the United States; Chief of the Arctic Section, Arctic, Desert and Tropic Information Center, Army Air Forces, New York.

Group Captain W. F. Hanna, Department of National Defence for Air, Ottawa.

Dr. D. Jenness, Department of Mines and Resources, Ottawa.

Dr. H. L. Keenleyside, Department of External Affairs, Ottawa.

Dr. T. Lloyd, Department of Geography, Dartmouth College, Hanover, N. H.

Commander D. B. MacMillan, USN. Hydrographic Office, Washington.

Dr. R. Newton, President of the University of Alberta, Edmonton.

Dr. J. J. O'Neill, Department of Geological Sciences, McGill University, Montreal.

G. R. Parkin, Sun Life Assurance Company of Canada, Ltd., Montreal.

Commander G. A. Patterson, USN. Hydrographic Office, Washington.

Dr. V. Stefansson, 67 Morton Street, New York.

Lt. A. L. Washburn, Arctic Section, Arctic, Desert and Tropic Information Center, Army Air Forces, New York.

Ensign J. C. Weaver, USNR, Hydrographic Office, Washington.

Col. J. T. Wilson, Director of Operational Research, National Defence Headquarters, Ottawa.

Dr. V. C. Wynne-Edwards, Department of Zoology, McGill University, Montreal.

Until further announcement, communications should be addressed to L. M. Gould, Carleton College, Northfield, Minnesota.

RICHARD FOSTER FLINT

YALE UNIVERSITY
(*On leave of absence*)

SPECIAL ARTICLES

IMPAIRMENT OF RESPONSE TO STILBESTROL IN THE OVIDUCT OF CHICKS DEFICIENT IN L. CASEI FACTOR[1] ("FOLIC ACID")

SEVERAL experimental and clinical studies have indicated a close relationship between the metabolism of the estrogens and the vitamins of the B-complex.[2,3,4,5] Stilbestrol[6] normally induces a marked proliferation of the tissues of the genital tract. This is reflected in an increase in weight of the genital organs which may be employed as an index of stilbestrol activity.

We have found that large doses of stilbestrol elicit only a slight weight increase in the oviducts of chicks maintained on a diet deficient in *L. casei factor* (L.C.F.). However, a marked weight increase is observed in the oviducts of control chicks receiving L.C.F. supplements either curatively or prophylactically. Moreover, pantothenic acid deficient chicks show substantial oviduct responses to stilbestrol.

New Hampshire Red chicks were maintained from hatching on the purified diet and supplement described by Campbell *et al.*[7] L.C.F. was administered by dropper either as the aqueous solution of crystalline material or as a concentrate. All estrogen-treated chicks received 0.5 mgm of stilbestrol in 0.1 cc of corn oil subcutaneously on each of the six days preceding autopsy.

The data (Table 1) show a striking difference between the oviduct weights obtained after stilbestrol administration in the L.C.F.-deficient chicks and in

TABLE 1

OVIDUCT WEIGHT RESPONSE TO STILBESTROL IN L.C.F. AND PANTOTHENIC ACID DEFICIENT CHICKS.*

	No. of Chicks	Oviduct mgms mean	Oviduct mgms range	Body wt. gms mean	Body wt. gms range
20 γ cryst. L.C.F. daily from birth	9	450	309–777	140	111–166
20 γ cryst. L.C.F. daily last 10 days	12	196	84–474	110	59–158
No L.C.F.	16	62	32–82	71	53–90
10 γ eq. L.C.F. conc. daily from birth	15	462	200–666	125	108–158
10 γ eq. L.C.F. conc. daily last 10 days	14	184	90–457	107	69–170
No Pantothenic; 10 γ eq. L.C.F. conc. daily from birth	9	281	156–553	70	60–80

* All chicks 21 to 25 days old at autopsy; oviduct weights of 13 uninjected chicks of the same age averaged 25 mgms (range 19–33) and their body weights averaged 117 gms (range 97–144 gms).

[1] The term "*L. Casei Factor* (L.C.F.)" refers to that member of the "folic acid" group isolated by B. C. Hutchings, E. L. R. Stokstad, N. Bohonos and N. H. Slobodkin (SCIENCE, 99: 371, 1944) and found by them to be active in the nutrition of the chick. This material was kindly furnished by Lederle Laboratories through the courtesy of Dr. E. L. R. Stokstad.

[2] M. S. Biskind and M. C. Shelesnyak, *Endocrinology*, 30: 819, 1942.

[3] M. S. Biskind, G. R. Biskind and L. H. Biskind, *Surg., Gynec. and Obst.*, 78: 49, 1944.

[4] A. Segaloff and A. Segaloff, *Endocrinology*, 34: 346, 1944.

[5] H. O. Singher, C. J. Kensler, H. C. Taylor, Jr., C. P. Rhoads and K. Unna, *Jour. Biol. Chem.*, 154: 79, 1944.

[6] E. C. Dodds, L. Goldberg, W. Lawson and R. Robinson, *Nature*, 141: 247, 1938.

[7] C. J. Campbell, R. A. Brown and A. D. Emmett, *Jour. Biol. Chem.*, 152: 483, 1944.