The topic "Industrial Hygiene Problems in Iowa" was discussed by Dr. Paul J. Houser, director of hygiene, Iowa State Department of Health; "Air-Borne Infection," by Dr. Roland Rooks, of the Department of Hygiene and Preventive Medicine, State University of Iowa. There were 128 paid admissions to the academy dinner on Friday night. After dinner Dr. Thomas F. Vance, of Iowa State College, made a sparkling address on "Sense and Nonsense Amid the Scientific." The academy address of Friday night was delivered by Dr. George E. Stoddard, of the State University of Iowa, on the subject "New Light on Intelligence," a review of recent work on the "Nature-Nurture" problem.

The academy met as usual in sections on Friday afternoon and Saturday morning to listen to the presentation of 123 papers. Three of these papers appeared in the symposium of the Science Teaching section. The speakers and subjects were as follows: E. W. Lindstrom, Iowa State College, "Teaching to Think *in* a Field Rather than *about* It"; W. H. Bragonier, Iowa State College, "The Use of the Standard Partial Regression Coefficient in Constructing General Botany Achievement Tests"; W. F. Loehwing, State University of Iowa, "Teaching of General Botany—Appraisal and Forecast."

The 1943 meeting will be held at Cedar Falls, Iowa, on the third Friday and Saturday of April. The officers and section chairmen for the new year are as follows: *President,* C. W. Lantz, Cedar Falls; *Vice-President,* E. R. Smith, Ames; *Secretary-Treasurer,* E. R. Becker, Ames; Editor, L. R. Wilson, Cedar Rapids; botany, W. E. Loomis, Ames; chemistry, general and physical, D. L. Deardorff, Mt. Pleasant; chemistry, organic and biological, F. B. Moreland, Iowa City; geology, E. J. Cable, Cedar Falls; mathematics, N. B. Conkwright, Iowa City; physics, L. T. Earls, Ames; psychology, H. F. Brandt, Des Moines; science teaching, Karl A. Stiles, Cedar Rapids; zoology, Leland P. Johnson, Des Moines.

E. R. BECKER,
Secretary

AMES, IOWA

REPORTS

REGULATIONS CONCERNING LABORATORY EQUIPMENT

THE Division of Industry Operations of the War Production Board has issued the following regulations in regard to the manufacture and use of laboratory equipment:

Because of the critical shortage of scientific equipment, university and other private laboratories engaged in research work unrelated to the production of materials, or in other research not directly connected with the war effort, will be unable to secure new laboratory equipment unless the particular use is approved by the Director of Industry Operations.

This is the result of Limitation Order L–144, issued to-day (June 12). The order prohibits the sale and delivery of laboratory equipment except for certified essential uses in order to save highly critical materials and to make certain that such equipment will be available for vital war purposes.

In addition to making special provision for the handling of requests for equipment for uses not specifically permitted, the order permits any laboratory or other user to obtain repair parts and operating supplies for maintenance of existing equipment and activities.

The regulations, which will affect 600 manufacturers and 3,000 laboratories, prohibit the sale, delivery, renting or purchase of laboratory equipment in which any of the following materials are contained: aluminum, chromium, copper, iron, magnesium, molybdenum, nickel, steel, tantalum, tin, titanium, any alloy of these metals, rubber, any synthetic rubber, or non-cellulose base synthetic plastics.

In order to buy or sell laboratory equipment containing the above materials, a certification must be made by a duly authorized official of the purchasing company or laboratory stating that the equipment will be used only for one of the following purposes:

1. Research on, or analysis of, materials.

2. Research by or for Government agencies or "Lend-Lease" countries.

3. For training of personnel for the Army and Navy or other Government Departments or "Lend-Lease" countries.

4. To the extent necessary for the replacement of essential existing equipment in laboratories affecting the public health, and in Federal, State and local government laboratories.

5. To the extent necessary for repair parts and operating supplies for maintenance of existing essential equipment and activities in laboratories.

6. For any use which the Director of Industry Operations determines necessary and appropriate in the public interest.

Determinations of the uses which will be permitted under item (6) will be made by E. R. Schaeffer, Chief of the Safety and Technical Equipment Branch, acting for the Director of Industry Operations. Mr. Schaeffer has been named Administrator of the L–144 Order, and authorized to approve, after consultation with the Army and Navy Munitions Board, further uses of laboratory equipment which may be necessary.

Manufacturers will obtain the necessary amounts of critical materials for purposes permitted by the order by filing PD–25A applications under the Production Requirements Plan. Distributors, wholesalers and jobbers

needing priority assistance should file PD–IX forms with the Distributors Branch of the War Production Board.

TITLE 32—NATIONAL DEFENSE
CHAPTER IX—WAR PRODUCTION BOARD
SUBCHAPTER B—DIVISION OF INDUSTRY OPERATIONS
PART 1261—LABORATORY EQUIPMENT
LIMITATION ORDER L–144

The fulfilment of requirements for the defense of the United States has created shortages in the supplies of Laboratory Equipment and the materials entering into the manufacture thereof for the war effort, for private account and for export; and the following Order is deemed necessary and appropriate in the public interest and to promote the national defense:

Section 1261.1—GENERAL LIMITATION ORDER *L–144.*

(a) *Definition.* For the purpose of this Order:

"Laboratory Equipment" means material, instruments, appliances, devices, parts thereof, tools and operating supplies for laboratories, or for use in connection with operations usually carried on in laboratories, not including second-hand items.

(b) *General Restrictions.*

(1) No Person shall sell, deliver, rent, purchase, acquire or accept delivery of Laboratory Equipment in which there is incorporated or used aluminum, chromium, copper, iron, magnesium, molybdenum, nickel, steel, tantalum, tin, titanium, any alloy of said metals, rubber, neoprene or other synthetic rubber, or non-cellulose base synthetic plastics, except pursuant to a purchase order or contract having certified thereon a statement in the following form, signed manually, or as provided in Priorities Regulation No. 7, by an official duly authorized for such purpose:

"Certification

The Laboratory Equipment herein ordered will be used or sold in conformity with the provisions of General Limitation Order No. L–144, with the terms of which the undersigned is familiar.

Name .....

By .....

Signature of duly authorized official"

(2) No person shall make the Certification described in the foregoing paragraph unless the Laboratory Equipment purchased or contracted to be purchased is for one or more of the following uses:

(i) Research on, or production, analysis or testing of, materials.

(ii) Research by or for the United States Army, Navy, Maritime Commission, or any other department, or agency of the government of the United States, or of any foreign country entitled to deliveries under the Act of Congress of March 11, 1941, "An Act to Promote the Defense of the United States" (Lend-Lease Act).

(iii) Training of personnel for the United States Army, Navy, Maritime Commission, or any other department of the United States, or for the government of any foreign country entitled to deliveries under the Act of Congress of March 11, 1941, "An Act to Promote the Defense of the United States" (Lend-Lease Act).

(iv) To the extent necessary for the replacement of essential existing equipment in laboratories affecting the public health, and in United States government, state, county, and municipal laboratories.

(v) To the extent necessary for repair parts and operating supplies for the maintenance of existing essential equipment and activities in laboratories.

(vi) For any use which the Director of Industry Operations, War Production Board, determines is necessary and appropriate in the public interest.

(3) Said Certification shall constitute a representation to the War Production Board and to the person with whom the purchase order or contract is placed that the subject matter of the order or contract will be used or sold in accordance with the provisions of this Order. Every person concerned shall be entitled to rely on said Certification, unless he knows or has reason to believe it to be false.

(4) No manufacturer shall use any scarce material described in foregoing paragraph (b) (1), where and to the extent that the use of other material is practicable.

(c) *Applicability of Priorities Regulation No. 1.* This Order and all transactions affected thereby are subject to the provisions of Priorities Regulation No. 1 (Part 944) as amended from time to time, except to the extent that any provision hereof may be inconsistent therewith, in which case the provisions of this Order shall govern.

(d) *Records.* All persons to whom this Order applies shall keep and preserve for not less than two years, accurate and complete records concerning inventories, production and sales, including copies of each purchase order or contract containing the certification hereinabove referred to.

(e) *Audit and Inspection.* All records required to be kept by this Order shall, upon request, be submitted to audit and inspection by duly authorized representatives of the War Production Board.

(f) *Reports.* All persons affected by this Order shall execute and file with the War Production Board such reports and questionnaires as said Board shall from time to time request.

(g) *Violations.* Any person who wilfully violates any provision of this Order, or who, in connection with this Order, wilfully conceals a material fact or furnishes false information to any department or agency of the United States is guilty of a crime, and upon conviction, may be punished by fine or imprisonment. In addition, any such person may be prohibited from making or obtaining further deliveries of, or from

processing or using, material under priority control and may be deprived of priorities assistance.

(h) *Appeal.* Any person affected by this Order who considers that compliance herewith would work an exceptional and unreasonable hardship upon him, may appeal to the War Production Board setting forth pertinent facts and the reasons such person considers that he is entitled to relief. The Director of Industry Operations may thereupon take such action as he deems appropriate.

(i) *Communications.* All reports required to be filed hereunder, or communications concerning this Order, shall, unless otherwise directed be addressed to:

"War Production Board
Safety and Technical Equipment Branch
Technical and Scientific Equipment Section
Washington, D. C. Ref: L-144"

Issued this 12th day of June, 1942.

J. S. KNOWLSON,
Director of Industry Operations

SPECIAL ARTICLES

EFFECT OF ORCHIDECTOMY ON SKELETAL METASTASES FROM CANCER OF THE MALE BREAST

A SYSTEMATIC study is in progress of the effects of induced hormone imbalance on the course of primary inoperable and metastatic breast cancer in both sexes. Among the procedures employed have been: (1) castration by irradiation of the ovaries; (2) bilateral oophorectomy; (3) the parenteral administration of limited amounts of estradiol monobenzoate; (4) the parenteral administration of testosterone propionate.

The immediate elevation of the serum calcium and subsequent radiographic evidence of extension of the skeletal metastases have been reported[1] in three female patients who received 400 to 500 mgms of testosterone propionate over periods of from 7 to 10 days. A fourth patient (Case I), a male with osseous metastases from a cancer of the breast, received 925 mgms of testosterone proprionate in 17 days. The only subsequent chemical abnormality observed was a slight elevation of the serum calcium level to 11.7 mgms. Measured radiographically, however, the metastatic lesions increased rapidly in number and extent. Pathological fractures of the humeri and vertebrae occurred before death 10 months after treatment.

From the evidence it was concluded that a steroid hormone imbalance due to the administration of testosterone propionate not only failed to inhibit the progress of metastatic mammary cancer but seemed to accelerate the activity of the growth in both sexes.

The effect of surgical castration on the osseous metastases from inoperable mammary cancer has been studied in a male of 72 years (Case II). Bilateral orchidectomy was performed in February, 1942. In the four months since operation evidence which suggests a regression of the growth has come to hand. The ulcerated lesion of the left breast has decreased in diameter from $7 \times 4 \times 2$ cm to $5 \times 3 \times 1.5$ cm. There has been complete relief of bone pain, previously a persistent and troublesome manifestation. Radiographic evidence indicates that the areas of decalcification, representing metastatic deposits of cancer in the ribs, vertebrae and scapula, have shown no increase in extent. Furthermore, in these areas an increased density has appeared, interpreted as a reflection of increased calcification and healing of the lesion. No chemical alteration was noted beyond a recent elevation of the serum alkaline phosphatase (5.9 to 11.1 units).

The rates at which estrogenic substance and 17 ketosteroid were excreted in the urine of these 2 patients were estimated before and after treatment (Case I—testosterone, Case II—orchidectomy). The results are given in Table 1.

TABLE 1

CASE I		
	Estrogens	Androgens
1/12–15/40	34.0 M.U.	44.5 mgms.
1/15 /40	Daily injections of 50 mgms. testosterone propionate begun	
1/15–18/40	34.0 M.U.	40.9 mgms.
1/18–21/40	22.0 M.U.	41.8 mgms.
1/21–24/40	50.0 M.U.	56.7 mgms.
CASE II		
	Estrogens	Androgens
2/ 6– 9/42	22.5 M.U.	11.7 mgms.
2/ 9 /42	Bilateral orchidectomy	
2/13–16/42	16.7 M.U.	3.0 mgms.
2/23–26/42	8.6 M.U.	12.0 mgms.
3/ 9–12/42	13.3 M.U.	8.7 mgms.
4/ 1– 4/42	Trace (less) than 4 M.U.	10.2 mgms.

The decrease in estrogen excretion after orchidectomy as well as a stable 17 ketosteroid output are striking features. Control of disease as extensive as that observed in Case II is unusual. It may be unassociated with the operative procedure employed, although this appears improbable.

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[1] J. H. Farrow and H. Q. Woodard, *Jour. Am. Med. Asn.*, 118: 339–343, January 31, 1942.