

maintained in these elevated-CO₂-air mixtures. The chorion retained its characteristic structure as a respiratory epithelium (Fig. 3). In contrast, all seven controls showed keratinization in the exposed area of chorion (Fig. 2). Evidently, in the presence of elevated concentrations of CO₂, the appearance of keratogenic changes in the appropriately prepared chorionic epithelium was completely prevented.

The effect of pure oxygen (3) was examined in fenestrated eggs prepared as described above and incubated till the 18th day in saturation-humidity chambers constantly gassed with oxygen. Neither the viability nor the general development of the embryos was noticeably affected. In all 35 eggs examined in this series, the exposed chorionic epithelium was found to have undergone a characteristic metaplasia into keratin-forming, multilayered epithelium (Fig. 4). In comparison with controls gassed with air, metaplasia in oxygen-gassed eggs appeared somewhat earlier in development and progressed to a more advanced stage. It was concluded that exposure to O₂ created conditions favorable for the initiation and rapid progression of keratogenic metaplasia. Whether O₂ acted as an inducing agent in setting

into motion the particular metabolic and morphogenetic systems resulting in keratogenesis is, at present, an open question.

Next, the response of the chorion to O₂ in the presence of CO₂ was examined in fenestrated eggs prepared as described above and constantly gassed with a mixture of 92-percent O₂ and 8-percent CO₂. It was assumed that absence of keratinization under these conditions would support the possibility that elevated levels of CO₂ have an inhibitory effect on this process. Of the ten eggs examined, none showed keratinization of the chorion, and the epithelium retained its attenuated, respiratory structure (Fig. 5). Thus, the presence of one part of CO₂ together with 11.5 parts of O₂ appeared to interfere with or inhibit the appearance of metaplastic changes.

These findings suggest that the presence of CO₂ at concentrations higher than atmospheric concentration restricts the ability of the chorion to undergo keratogenic changes. The removal of CO₂ inhibition appears, therefore, to play an important—though not exclusive—role in the etiology of keratogenic metaplasia. There are various indications that CO₂ at increased partial pressure may be a differentiation-controlling

factor (4). It is thus not unlikely that, in normal development, CO₂ promotes the respiratory differentiation of the chorion, contributing thereby to its exclusion from other metabolic and developmental courses. Removing this gaseous control mechanism creates conditions favorable for a response of this tissue to other stimuli and for the display of new developmental potentialities. Under such circumstances, O₂ appears to stimulate the emergence of metabolic patterns resulting in keratogenic metaplasia. Other agents may, perhaps, provoke different developmental responses (5).

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References and Notes

1. A. Moscona, *Proc. Soc. Exptl. Biol. Med.* 98, 757 (1958).
2. ———, *Developmental Biol.* 1, 1 (1959).
3. The gases used in this study were purchased from the Ohio Chemical and Surgical Equipment Co., Chicago.
4. W. F. Loomis, *Science* 126, 735 (1957).
5. This study was aided by grants from the U.S. Public Health Service (C-4272) and from the Wallace C. and Clara A. Abbott Memorial Fund of the University of Chicago.

27 February 1959

Meetings

American College of Cardiology

The American College of Cardiology, a recent affiliate of the American Association for the Advancement of Science, was organized in 1949 to fulfill the need for a wholly professional body to promote and advance clinical cardiology and angiology and to study the treatment of cardiovascular disease. The objectives of the college are, first, to provide a meeting place for the exchange of information between people doing research in this and related fields and the clinical practitioner, second, to publish a journal in clinical cardiology. The college also set up and encouraged a workshop program under which masters in particular fields of cardiological investigation invite to their laboratories or wards groups of fellows of the college for a short, intensive period of work in

the special techniques available. This workshop program has been enlarged until it reaches from coast to coast, and special groups are available at practically any time of the year.

The convention of the college takes place in the spring in some center of relatively high population and includes technical and scientific exhibits. The program usually covers a variety of subjects and lasts 4 or 5 days; each segment of the program ordinarily consists of a panel discussion by men working in a particular field. There is always an attempt to have on each panel a worker in basic science, several men from the area of clinical research, and others engaged in the clinical practice of cardiology who have a particular interest or reputation in that field.

There is an interim meeting each fall; this is ordinarily held in conjunction

with the faculty of a university or teaching hospital in a more lightly populated area. At the interim meetings an attempt is made to study exhaustively one or two subjects in the field of cardiology or angiology.

A special feature of each of the meetings of the college is an evening session called a "fireside conference." Tables, eight or ten in number, are set up in a large ballroom, separated from each other by a distance of 10 or 15 feet. On each there is a placard giving the subject of discussion at that table—for instance, congenital heart disease, cardiac catheterization, use of enzymes in diagnosis, diet in heart disease, treatment of angina pectoris, phonocardiography, surgical treatment of acquired heart disease, pregnancy and heart disease, and so on. At each table sit a discussion leader and the visitors who are interested in that particular subject. The discussion is completely informal, and questions and answers are fired back and forth. One can leave the group at any time and wander over to another, and there is constant circulation between the tables. Fireside conferences are ordinarily planned to last 2 hours, from 8 to 10 o'clock in the evening, but in the experience of the college, they go on until well after midnight. When the room is closed at midnight, the discussions continue in the lobby and the coffee

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shop. This exchange has always been one of the most popular features of the meetings.

The current officers of the college are as follows: president, George W. Calver (Washington, D.C.); president-elect, Osler A. Abbott (Emory University, Ga.); vice presidents, Dwight E. Harken (Boston, Mass.), Ignacio Chavez (Mexico City, Mexico), Myron Prinzmetal (Beverly Hills, Calif.); secretary-treasurer and executive director, Philip Reichert (New York); assistant secretary, Henry I. Russek (Staten Island, N.Y.); assistant treasurer, Louis F. Bishop (New York). The council representative to the AAAS is George W. Calver. The office of the executive director is in the Empire State Building, 350 5th Ave., New York 1, N.Y.

PHILIP REICHERT
American College of Cardiology,
New York

West Central Biochemical Society

The newly formed West Central States Biochemical Society will meet in Columbia, Mo., 30-31 October. Severo Ochoa, professor of biochemistry at New York University School of Medicine, will be the guest speaker at a dinner on the opening day. Papers will be heard on 31 October, then the conference will terminate with a business meeting. For information, write to the secretary, D. F. Millikan, College of Agriculture, University of Missouri, Columbia, Mo.

International Endocrinology Congress

The program of the first International Congress of Endocrinology, which will be held in Copenhagen 18-23 July 1960, will consist of ten symposia, a round-table discussion, and groups of shorter (10-minute) papers. Speakers at the symposia and at the round-table discussion are invited, but the short papers may be submitted. Forms for registration in the congress, along with forms for the submission of abstracts, may be obtained by writing to Dr. Svend G. Johnsen, Hormone Department, Statens Seruminstitut, Copenhagen S, Denmark. The final date for the submission of abstracts is 31 December 1959.

The official languages of the congress are English, French, German, and Spanish. A volume containing advance abstracts of symposium contributions and the short communications (in one of the official languages and translated into Interlingua) will be distributed to members on registration at the Technical University of Denmark in Copenhagen. Titles and abstracts should not be sent to the program committee, but the pro-

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gram committee will review and arrange for the presentation of such papers in appropriate congress sessions. Gregory Pincus of the Worcester Foundation for Experimental Biology, Shrewsbury, Mass., is chairman of the Subcommittee on Program.

Instrument Symposium and Exhibit

The ninth annual Instrument Symposium and Research Equipment Exhibit will be held 28 September–1 October, at the National Institutes of Health, Bethesda, Md. Sponsors of the exhibit are the nation's leading instrument manufacturers, who will display the newest developments in laboratory glassware and electronic, surgical, radiation, optical, gas-sampling, and other research equipment.

Sponsors of the symposium are the Washington, D.C., sections of the American Association of Clinical Chemists, American Chemical Society, Instrument Society of America, Professional Group on Medical Electronics of the Institute of Radio Engineers, Society of American Bacteriologists, and the Society for Experimental Biology and Medicine. For additional information, write James B. Davis, National Institutes of Health, Bethesda 14, Md.

Forthcoming Events

July

26–30. International Psychoanalytical Assoc., Copenhagen, Denmark. (Miss P. King, 37 Albion St., London, W.2.)

27–4. International Federation of Translators, Bad Godesberg, Germany. (Dritter Internationaler FIT-Kongress, Kongress Sekretariat, Bundesverband der Dolmetscher und Übersetzer e. V. (BDÜ) Hausdorfstrasse 2, Bonn, Germany.)

30–31. Computers and Data Processing, 6th annual symp., Estes Park, Colo. (W. H. Eichelberger, Denver Research Inst., Univ. of Denver, Denver 10, Colo.)

August

1–8. World Congress of Esperantists, 44th, Warsaw, Poland. (Office of Intern. Conferences, Dept. of State, Washington 25.)

4–5. American Astronautical Soc., 2nd annual western, Los Angeles, Calif. (A. P. Mayernik, AAS, 6708 53 Rd., Maspeth 78, N.Y.)

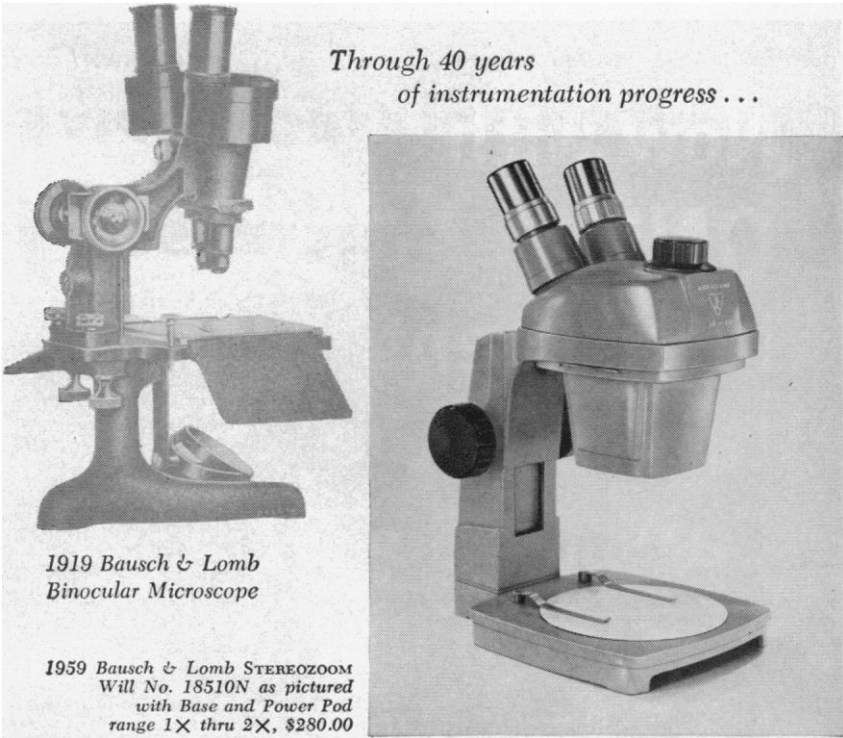
6–8. Human Pituitary Hormones, colloquium (by invitation only), Buenos Aires, Argentina. (G. E. W. Wolstenholme, Ciba Foundation, 41 Portland Place, London W.2, England.)

9–12. American Soc. of Mechanical Engineers (Heat Transfer Div.), conf., Storrs, Conn. (D. B. MacDougall, ASME, 29 West 39 St., New York 18.)

9–15. Physiological Sciences, 21st intern. cong., Buenos Aires, Argentina. (C.

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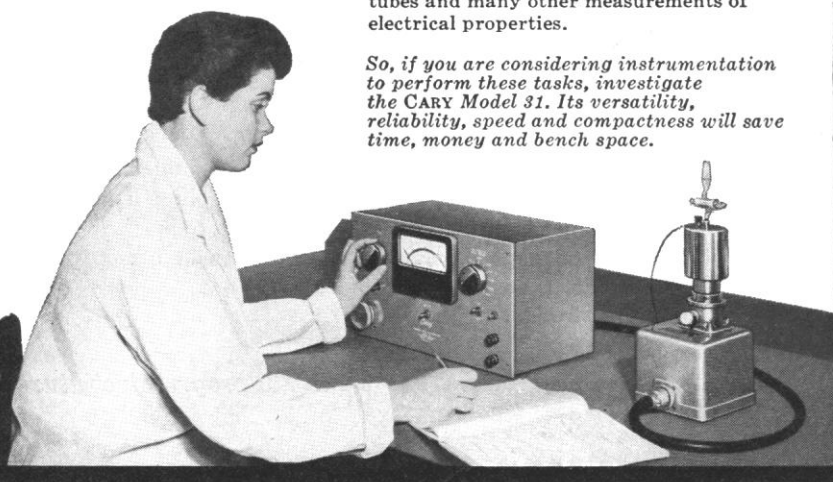
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F. Schmidt, Univ. of Pennsylvania School of Medicine, Philadelphia 4.)

10-13. National Medical Assoc., Detroit, Mich. (J. T. Givens, 1108 Church St., Norfolk, Va.)

10-13. Society of Automotive Engineers, natl. West Coast meeting, Vancouver, B.C., Canada. (R. W. Crory, Meetings Operation Dept., SAE, 485 Lexington Ave., New York 17.)

16-19. Botanical Nomenclature, discussions (Intern. Bureau for Plant Taxonomy and Nomenclature), Montreal, Canada. (J. Rousseau, Natl. Museum, Ottawa, Canada.)

16-21. American Pharmaceutical Assoc., Cincinnati, Ohio. (R. P. Fischelis, APA, 2215 Constitution Ave., NW, Washington 7.)

17. Ultrasonics, natl. symp., San Francisco, Calif. (L. G. Cumming, Inst. of Radio Engineers, 1 E. 79 St., New York 21.)

17-21. Pacific Southwest Assoc. of Chemistry Teachers, Pacific Grove, Calif. (W. A. Craig, 416 N. Citrus Ave., Los Angeles 36, Calif.)

17-22. Logopedics and Phoniatrics, 11th intern. cong., London, England. (Miss P. Carter, 46 Canonbury Square, London N.1, England.)

19-26. Refrigeration, 10th intern. cong., Copenhagen, Denmark. (M. Kondrup, Danish Natl. Committee, Intern. Congress of Refrigeration, P.O. Box 57, Roskilde, Denmark.)

19-29. Botanical Cong., 9th intern., Montreal, Canada. (C. Frankton, Secretary-General, 9th Intern. Botanical Cong., Science Service Bldg., Ottawa, Ontario, Canada.)

19-29. International Assoc. of Wood Anatomists, Montreal, Canada. (IAWA, Laboratorium für Holzforschung E.T.H. Universitätsstrasse 2, Zurich, Switzerland.)

19-29. Mycological Soc. of America, Montreal, Canada. (E. S. Beneke, Dept. of Botany and Plant Pathology, Michigan State Univ., E. Lansing.)

19-29. Phycological Soc. of America, Montreal, Canada. (W. A. Daily, Dept. of Botany, Butler Univ., Indianapolis 7, Ind.)

20-22. Rocky Mountain Radiological Soc., Denver, Colo. (J. H. Freed, 4200 E. Ninth Ave., Denver 20.)

20-25. Chemical Thermodynamics, symp., Wattens, Austria. (F. Vorländer, Deutsche Bunsen-Gesellschaft, Carl-Bosh-Haus, Varrentrappstrasse, 40-42, Frankfurt a.M., Germany.)

20-27. Therapeutics, symp., Gardone, Italy. (R. Morf, c/o Sandoz S.A., Basel 13, Switzerland.)

20-2. Limnological Cong., 14th intern., Vienna and Salzburg, Austria. (Secretary, 14th Intern. Limnological Congress, Biologische Station, Lunz am See, Austria.)

23-26. American Farm Economic Assoc., Ithaca, N.Y. (C. D. Kearl, Dept. of Agricultural Economics, Warren Hall, Cornell Univ., Ithaca.)

23-27. Veterinary Medicine, 3rd Pan-American Cong., Kansas City, Mo. (B. D. Blood, Pan-American Congresses of Veterinary Medicine, P.O. Box 99, Azul, Buenos Aires Province, Argentina.)

24-26. American Accounting Assoc., Boulder, Colo. (C. Cox, 437 Hagerty Hall, Ohio State Univ., Columbus 10.)

24-26. Anti-Submarine Warfare (classified), symp., San Diego, Calif. (R. R. Dexter, Inst. of the Aeronautical Sciences, 2 E. 64 St., New York 21.)

24-26. Dynamics of Conducting Fluids, symp. (American Rocket Soc. and Northwestern Univ.), Evanston, Ill., (J. J. Hartford, ARS, 500 Fifth Ave., New York 36.)

24-27. American Hospital Assoc., New York, N.Y. (E. L. Crosby, 18 E. Division St., Chicago, Ill.)

24-28. Australian and New Zealand Assoc. for the Advancement of Science, 34th cong., Perth, Western Australia. (J. R. A. McMillan, Science House, 157 Gloucester St., Sydney, Australia.)

24-29. Infrared Spectroscopy Inst., 10th annual, Nashville, Tenn. (N. Fuson, Director, Infrared Spectroscopy, Fisk Univ., Nashville 8.)

24-29. International Assoc. for Hydraulic Research, cong., Montreal, Canada. (IAHR, c/o Laboratoire Hydraulique, Raam 61, Delft, Netherlands.)

24-29. Ionization Phenomena in Gases, 4th intern. conf., Upsala, Sweden. (A. Nilsson, Secretary-General, Inst. of Physics, Upsala, Sweden.)

24-29. Polarography, 2nd intern. cong., Cambridge, England. (Mrs. B. Lamb, Chemistry Lab., Evershed & Vignoles, Corner of Iveagh Ave., N. Circular Rd., London N.W.10, England.)

24-30. Modern Systems for Detecting and Evaluating Optical Radiation (Intern. Optical Commission), symp., Stockholm, Sweden. (S. S. Ballard, Dept. of Physics, Univ. of Florida, Gainesville.)

25-27. Petroleum Industry Conf., AIEE, Long Beach, Calif. (N. S. Hibshman, AIEE, 33 W. 39 St., New York 18.)

25-28. Alaskan Science Conf., Alaskan Div., AAAS, 10th, Juneau. (N. J. Wilimovsky, Bur. of Commercial Fisheries, Box 2021, Juneau.)

25-28. American Dietetic Assoc., 42nd annual, Los Angeles, Calif. (Miss R. M. Yakel, ADA, 620 N. Michigan Ave., Chicago 11, Ill.)

25-30. American Ornithologists' Union, Regina, Saskatchewan, Canada. (H. G. Deignan, Div. of Birds, U.S. National Museum, Washington 25.)

26-29. International Assoc. of Milk and Food Sanitarians, Glenwood Springs, Colo. (V. T. Foley, Health Dept., Kansas City, Mo.)

26-29. International Union of Pure and Applied Chemistry, 20th conf., Munich, Germany. (Div. of Chemistry and Chemical Technology, Natl. Research Council, Washington 25.)

27-29. American Assoc., of Clinical Chemists, 11th annual, Cleveland, Ohio. (A. Hainline, Jr., AACC, Cleveland Clinic Foundation, 2020 E. 93 St., Cleveland 6.)

27-29. American Physical Soc., Hawaii. (K. K. Darrow, APS, Columbia Univ., New York 27.)

28-29. Weather Modification (with American Soc. of Civil Engineers), conf., Denver, Colo. (H. G. Houghton, AMS, Dept. of Meteorology, Massachusetts Inst. of Technology, Cambridge 39, Mass.)

28-30. American Folklore Soc., annual, Albany and Cooperstown, N.Y. (MacE. Leach, 110 Bennett Hall, Univ. of Pennsylvania, Philadelphia 4.)

(See issue of 19 June for comprehensive list)

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