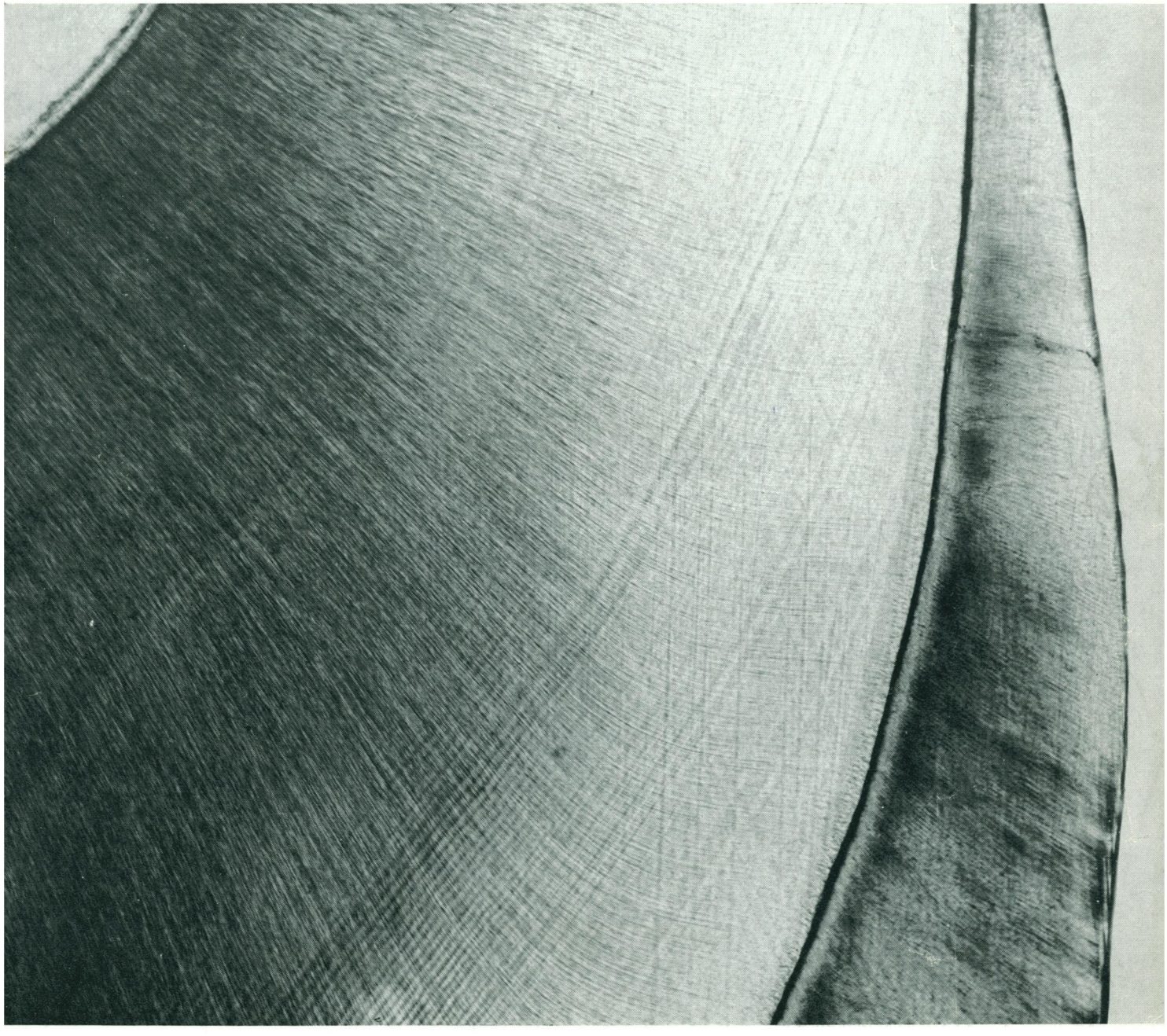
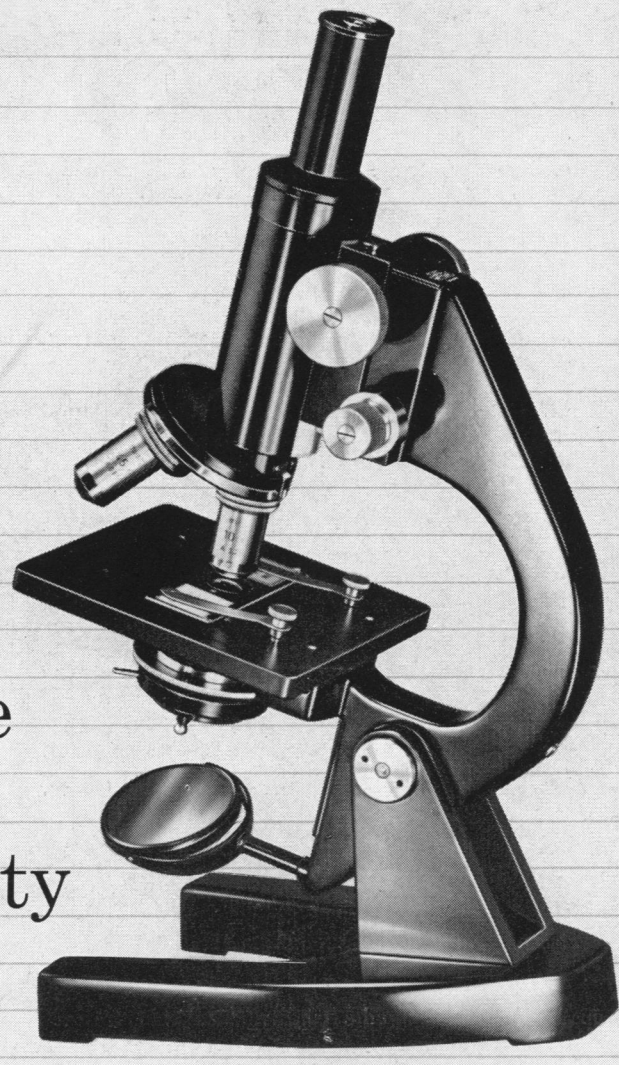
SCIENCE 18 December 1959

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE





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18 December 1959, Volume 130, Number 3390

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Cover

Microscopic section of monkey tooth. The pie-shaped area, upper left, is a segment of the "nerve" (pulp), which is lined by a row of cells (odontoblasts). Extensions of these cells radiate obliquely through minute channels in the bulk of ivory (dentin), and are intersected by delicate rhythmic growth lines, like rings of a tree trunk. On the right, the rock-hard "skin" of the tooth (enamel) forms a homogeneously mineralized shell of protection. Specimen from laboratory of Reidar F. Sognnaes. See page 1681.

Letters

Weathered Bedrock in New Jersey

The article entitled "Recent saprolite" that appeared in a recent issue of *Science* (*1*) is, in my opinion, an example of an extreme hypothesis and should, somewhere, have carried a statement to that effect. If the interpretation made by Minard regarding the length of time involved in the production of a thick saprolite in northern New Jersey should happen to be correct, a great deal of doubt could be cast on the use of the degree of soil development as an index for estimating relative amounts of elapsed time during the Cenozoic era. For this reason, as well as because many nongeologists may not be aware of the controversial possibilities in the article, I feel compelled to point out several arguments advanced by Minard that I believe to have resulted from faulty reasoning.

In order to support his hypothesis of exceedingly rapid weathering of the Pochuck gneiss at this place, Minard suggested that glacial abrasion would have removed it completely or would have greatly distorted the layering in the saprolite. He also argues that had it been overridden by the glacier while frozen, a congeliturbate structure should be found in the upper part of the material. Neither of these postulates is valid. Near its margin, an ice sheet can readily move over unconsolidated material without removing or distorting it. The ice lobes that passed through the Great Lakes basins buried many nearly complete soil profiles virtually undisturbed as much as 15 to 20 miles back from their margins (*2*); this saprolite locality is only 5 miles north of the glacial boundary in New Jersey.

Even though Salisbury's classic report on the glacial geology of New Jersey (*3*) was published in 1902, I am sure that it is not so obsolete that it can be disregarded completely. Salisbury stated that locally, near the last glacial boundary, till rests on disintegrated rock; in every observed case, relationships of the materials indicate that the ice had failed to remove the weathered rock. Similar statements were made in the Raritan folio (*4*).

Salisbury also reported that although striae are rare, those found on exposed bosses of gneiss in this vicinity indicated a direction of ice movement of about S 12°W. If these data can be accepted, this particular saprolite-covered ridge actually is 300 feet below the crest of a hill and partly protected on the lee side, one of the better places to search successfully for buried soil profiles in a glaciated region. Structures that might be called congeliturbates are rare near the southern limits of glaciation in Illinois, Indiana, and Ohio, although they have been reported from Pennsylvania (*5*).

MacClintock's study of the degree of weathering of gneissic cobbles in the drift of northern New Jersey was an attempt, which seems to have been reasonably successful, to relate differences in the degree of weathering of certain types of cobbles in the pre-Wisconsin drift to the age of the enclosing glacial sediment (*6*). The presence of weathered cobbles in unweathered ice-laid drift can be readily explained if one understands that glacial ice picked up chunks of saprolitic material as it moved forward. It then incorporated some of these chunks into the sediment without wholly destroying them.

Hunt and Sokoloff (*7*) did not present "evidence for rapid, deep weathering." Rather, they pointed out that we are in no position to evaluate time as a factor in the development of a paleosol unless we know much more than we do now about the climate and other aspects of the environment that existed where any particular old soil was formed.

The existence of a thick saprolite on gneiss in one locality, covered by a very thin layer of weathered drift, should be an indication that this thick weathered zone on the gneiss did not form under the same conditions of time and climate that produced a far thinner weathered zone on the same materials nearby. The depth of weathering (that is, removal of carbonates) of the Wisconsin till in New Jersey is not great, generally 2 to 3 feet, and rarely as much as 5 feet (*3*). Minard points out that about 10 miles south of this locality the saprolite blanket on unglaciated gneiss is 60 feet thick. I would find it far easier to accept a hypothesis that the 25-foot-thick saprolite in the locality under discussion is part of a pre-Wisconsin soil the ice failed to dislodge. Minard's postulate that it is the result of weathering during the past 18,000 to 20,000 years seems to me untenable.

As minor editorial points on Minard's article, the dates of his references 4 and 5 are incorrect, as is the publication number of his reference 5. His

(Continued on page 1719)

Meetings

Laboratory Animal Breeders

The charter meeting of the Laboratory Animal Breeders Association was held in Chicago on 2 December 1958. A large number of the breeders of the country attended. The membership, which now numbers 56, includes most of the large commercial breeding organizations of the country, in addition to many producers who operate on a smaller scale. In order that the attitudes of all breeders may be represented, the constitution of the association provides that each member organization shall have one vote. The excellent attendance at the first meeting indicates that within another year almost 100 percent of the commercial breeders in the United States will be members.

The membership as a whole participated in the development and adoption of the constitution and bylaws and elected officers as follows: president, J. C. Kile, Jr.; vice president, Henry L. Foster; second vice president, Clyde K. Miller; and secretary, Elizabeth J. Simonsen. Regional representatives to the executive committee were appointed.

There has been much consideration given over the past several years to establishment of a program for accrediting the facilities of laboratory animal breeders. It is hoped that in the next few years the Laboratory Animal Breeders Association will be able to sponsor and participate in establishing a program such as this. A committee to consider regulatory activities was appointed.

Since there is a need for expansion of knowledge in the field of laboratory animal husbandry, a committee on research was designated to consider animal-husbandry projects which the organization or the members may undertake and to coordinate such activities and accumulate information relative to the many problems involved.

An extremely important consideration is the relationship of the association with other areas of the laboratory-animal industry. An editorial and publicity committee was appointed to advise members of the industry other than the commercial breeders of the existence of the organization and to keep them abreast of activities as the program develops.

A committee on shipping relations was appointed to study current rates for shipping laboratory animals.

Guest speakers at the charter meeting were L. R. Christensen (director of the Berg Institute, New York University); Berton F. Hill (executive secretary of the Institute of Laboratory Animal Resources); and W. T. S. Thorp (dean, College of Veterinary Medicine, University of Minnesota).

ELIZABETH SIMONSEN
Simonsen Laboratories,
Gilroy, California

Forthcoming Events

January

18–21. American Astronautical Soc., 6th annual, New York, N.Y. (A. P. Mayernik, AAS, 6708 53 Rd., Maspeth 78, N.Y.)

19–21. American Meteorological Soc., 40th annual, Boston, Mass. (K. C. Spengler, 3 Joy St., Boston.)

19–21. Congenital Malformations, CIBA symp. (by invitation only), London, England. (G. E. W. Wolstenholme, 41 Portland Pl., London, W.1.)

21–23. American College of Surgeons, Louisville, Ky. (H. P. Saunders, 40 E. Erie St., Chicago 11, Ill.)

23–28. American Acad. of Orthopedic Surgeons, Chicago, Ill. (J. K. Hart, 116 S. Michigan, Chicago 3.)

24–29. American Rocket Soc., Princeton, N.J. (J. J. Harford, ARS, 500 Fifth Ave., New York 36.)

25–28. Institute of the Aeronautical Sciences, 28th annual, New York, N.Y. (IAS, 2 E. 64 St., New York 21.)

25–28. Plant Maintenance and Engineering Show, Philadelphia, Pa. (R. S. Wolcott, Clapp & Poliak, 341 Madison Ave., New York 17.)

25-29. Stress Measurement Methods, symp., Tempe, Ariz. (P. K. Stein, Strain Gage Readings, 5602 East Monte Rosa, Phoenix, Ariz.)

27–28. College-Industry Conf., Amer. soc. for Engineering Education, St. Louis, Mo. (W. L. Collins, ASED, Univ. of Illinois Urbana.)

27–28. Group Therapist, His Personality, Training, and Functions, 4th annual, AGPA, New York, N.Y. (American Group Psychotherapy Assoc., Inc., 1790 Broadway, New York 19.)

27–29. American Mathematical Soc., 66th annual, Chicago, Ill. (J. W. Green, Univ. of California, Los Angeles 34.)

27–30. American Physical Soc., annual, New York, N.Y. (K. Darrow, APS, Columbia Univ., 116 St. and Broadway, New York.)

28–30. Mathematical Assn. of America, 43rd annual, Chicago, Ill. (H. M. Gehman, Univ. of Buffalo, Buffalo 14, N.Y.)

28–30. Western Soc. for Clinical Research, 13th annual, Carmel-by-the-Sea, Calif. (W. N. Valentine, Western Soc. for Clinical Research, Univ. of California Medical Center, Dept. of Medicine, Los Angeles 24.)

29–30. American Group Psychotherapy Assoc., Inc., 17th annual conf., New York, N.Y. (American Group Psychotherapy Assoc., Inc., 1790 Broadway, New York 19.)

31–5. American Inst. of Electrical Engineers, New York, N.Y. (N. S. Hibshman, AIEE, 33 W. 39 St., New York 18.)

31–7. Pan American Cong. of Ophthalmology, 6th, Caracas, Venezuela. (J. W. McKinney, 921 Exchange Bldg., Memphis, Tenn.)

February

1–4. American Soc. of Heating, Refrigerating and Air Conditioning Engineers, semi-annual, Dallas, Tex. (Miss J. I. Szabo, ASHRACE, 234 Fifth Ave., New York 1.)

1–4. Instrument-Automation Conf., Houston, Tex. (Director, Technical and Educational Services, Instrument Soc. of America, 313 Sixth Ave., Pittsburgh 22.)

1–5. American Inst. of Electrical Engineers, winter general, New York, N.Y. (N. S. Hibshman, AIEE, 33 W. 39 St., New York 18.)

2–4. Haemopoiesis—Cell Production and Its Regulation, Ciba Foundation symp. (by invitation only), London, England. (G. E. W. Wolstenholme, Ciba Foundation, 41 Portland Pl., London, W.1, England.)

2–4. Society of the Plastics Industry (Reinforced Plastics Div.), Chicago, Ill. (W. C. Bird, SPI, 250 Park Ave., New York 17.)

3–5. Military Electronics, IRE winter conv., Los Angeles, Calif. (G. B. Knoob, Motorola, Inc., Military Electronics Div., 1741 Ivar Ave., Hollywood 28, Calif.)

3–6. Parathyroid Research, symp., Houston, Tex. (R. V. Talmage, Dept. of Biology, Rice Inst., Houston.)

4–6. American Soc. for Metals, San Francisco, Calif. (R. Huggins, ASM, Stanford Univ., Stanford, Calif.)

4–6. Congress on Administration, 3rd annual, Chicago, Ill. (R. E. Brown, American College of Hospital Administrators, 840 N. Lake Shore Drive, Chicago 11.)

7–10. Radioactive Isotopes in Clinical Medicine and Research, 4th intern. symp., Bad Gastein, Austria. (R. Höfer, 2nd Medical Univ. Clinic, 13 Garnisongasse, Vienna 1X, Austria.)

10–11. Gas Cooled Reactor, symp., Philadelphia, Pa. (F. L. Jackson, Franklin Inst., Philadelphia, Pa.)

10–12. Solid States Circuit Conf., Philadelphia, Pa. (T. R. Finch, Bell Telephone Laboratories, Murray Hill, N.J.)

10–13. National Assoc. for Research in Science Teaching, 33rd annual, Chicago, Ill. (C. M. Pruitt, Univ. of Tampa, Tampa, Fla.)

10–13. National Soc. of College Teachers of Education, Chicago, Ill. (E. J. Clark, Indiana State Teachers College, Terre Haute.)

11. Protein and Amino Acid Requirements of Swine, Chicago, Ill. (J. T. Sime, Assoc. of Vitamin Chemists, Evaporated Milk Assoc., 228 N. La Salle St., Chicago 1.)

14–18. American Inst. of Mining, Metallurgical and Petroleum Engineers, annual, New York, N.Y. (E. O. Kirkendall, AIME, 29 W. 39th St., New York 18.)

16. Astronomical Soc. of the Pacific annual, San Francisco, Calif. (S. Einarsson, Leuschner Observatory, Univ. of California, Berkeley 4.)

18–19. Chemical Inst. of Canada (Protective Coatings Div.), Toronto, Ont., and Montreal, Que., Canada. (Scientific Liaison Office, National Research Council, Sussex Drive, Ottawa, Canada.)

18–20. National Soc. of Professional Engineers, winter, Wichita, Kan. (P. H. Robbins, NSPE, 309 Bancroft Bldg., Univ. of Nebraska, Lincoln.)

21–24. American Inst. of Chemical Engineers, Atlanta, Ga. (F. J. Van Antwerpen, AICE, 25 W. 45 St., New York 36.)

22–25. Technical Assoc. of the Pulp and Paper Industry, annual, New York, N.Y. (J. Winchester, TAPPI, 155 E. 44 St., New York 17.)

22–4. Scientific Management, 12th intern. cong., Sydney and Melbourne, Australia. (C. M. Gray, Federal Council of the Australian Inst. of Management, Western House, 83 William St., Melbourne, C.1, Victoria, Australia.)

24–26. Biophysical Soc., 4th annual, Philadelphia, Pa. (O. H. Schmitt, Biophysical Soc., Chairman, Program Committee, Univ. of Minnesota, Minneapolis.)

25–27. Cell Physiology of Neoplasia (14th annual symp. on fundamental cancer research), Houston, Tex. (Editorial Office, Univ. of Texas M. D. Anderson Hospital, Texas Medical Center, Houston 25.)

26. Highway Geology, 11th annual symp., Tallahassee, Fla. (W. F. Tanner, Geology Dept., Florida State Univ., Tallahassee.)

29–4. Pittsburgh Conf. on Analytical Chemistry and Applied Spectroscopy, Pittsburgh, Pa. (L. P. Melnich, U.S. Steel Corp., Monroeville, Pa.)

March

3–5. American Acad. of Forensic Sciences, Chicago, Ill. (W. J. R. Camp, AAFS, 1853 W. Polk St., Chicago 12.)

4–6. National Wildlife Federation, Dallas, Tex. (C. H. Callison, 232 Carroll St., NW, Washington 12.)

7–9. Wildlife Management Inst., Dallas, Tex. (C. R. Gutermuth, 709 Wire Bldg., Washington 5.)

7–11. American Soc. of Civil Engineers, New Orleans, La. (E. S. Kirkpatrick, ASCE, 33 W. 39 St., New York 18.)

10. Recent Developments in Poultry Nutrition (Assoc. of Vitamin Chemists), Chicago, Ill. (J. T. Sime, Director of Research, Evaporated Milk Assoc., 228 N. La Salle St., Chicago 1.)

14–16. American Railway Engineering Assoc., annual conv., Chicago, Ill. (N. D. Howard, AREA, 59 E. Van Buren St., Chicago 5.)

14–17. Positive Health of Older People, forum, Miami Beach, Fla. (A. Mallach, National Health Council, 1790 Broadway, New York 19.)

15–21. Nondestructive Testing, 3rd intern. conf., Tokyo and Osaka, Japan. (S. Ishizaka, Scientific Attaché, Embassy of Japan, 2514 Massachusetts Ave., NW, Washington 8.)

17. Congress for Pharmacists, 2nd annual, Jamaica, N.Y. (Congress for Pharmacists, Public Relations Office, St. John's Univ., Jamaica 32.)

17–19. American Radium Soc., conf., San Juan, Puerto Rico. (ARS, 635 East Union, Pasadena, Calif.)