To produce gliding, a certain shearing force per cm<sup>2</sup> gliding area is necessary. This force seems to be about 5 kg/cm<sup>2</sup>. When the force is increased above this minimum value, it is to be expected that the gliding rate in the beginning will increase strongly with the shearing force; but long before the rate approaches a critical value of  $5 \times 10^{-2}$  cm/sec, it is to be

expected that the rate of gliding will increase only slowly with the force. At the critical rate the gliding distance, in the time a molecule makes a turn (10-6 sec), is equal to the distance between the molecules in the gliding plane (4.5 A). The existing observations seem to be in agreement with this conclusion, but they are not sufficiently accurate to verify it.

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# News and Notes

## Scientists in the News

Wm. A. Amberson, of the University of Maryland, will spend the months of August, September, and October as a guest professor in physiology on the medical faculty of the University of Vienna, lecturing on neuromuscular physiology.

Charles W. J. Armstrong, formerly head of the Chemotherapy Section, Laboratory of Hygiene. Department of National Health and Welfare, Ottawa, Canada, has been made director of the Division of Pharmacology, E. R. Squibb & Sons.

Harold W. Brown, director of the School of Public Health of Columbia University, has been appointed dean of the University of Puerto Rico College of Medicine, succeeding Donald S. Martin, who resigned. Dr. Brown was Chancellor Benitez' official adviser in planning the establishment of the medical college two years ago. An expert on tropical diseases, he had previously been a professor of parasitology at Columbia.

George F. Carrier, of Brown University, has been appointed Gordon McKay professor of mechanical engineering at Harvard. His work will be mainly in applied mechanics.

Recent visitors at the National Bureau of Standards included John Cockroft, director of the British Atomic Energy Research Establishment at Harwell; Minoru Imoto, of Osaka City University, Japan; and E. C. Stathis, professor of chemistry at the University of Athens. Dr. Stathis has been in the U.S. since last September, when he attended the Chemical Conclave in New York. He spent some time at the University of Minnesota with I. M. Kolthoff and has visited MIT and Harvard. He expected to leave at the end of March for England.

Robert Cruickshank, professor of bacteriology in the University of London at St. Mary's Hospital Medical School, is visiting 16 American and Canadian medical centers, among them the Communicable Disease Center, USPHS, at Alanta, and the laboratories at Chamblee. Dr. Cruickshank was guest of honor at a dinner sponsored by the CDC Branch of the Scientific Research Society of America at Emory University.

The California Texas Oil Company, Ltd., has announced the election of George M. Cunningham as president and J. P. McCulloch as vice president, of American Overseas Petroleum, Ltd., affiliate of Caltex engaged in exploration.

Richard A. Deno, chairman of the Department of Biological Sciences at Rutgers University College of Pharmacy, will join the faculty of the University of Michigan this fall as professor of pharmacognosy. He will teach two new courses in academic pharmacy.

Chauncey D. Leake, of the University of Texas Medical Branch, Galveston, has been given leave of absence to work on old Egyptian medical papyri at the Institute for Advanced Study. He is giving a series of talks at Eastern institutions on this subject this month and will speak at the Army Medical Library, Washington, Apr. 15, on "Leonardo da Vinci: Scientist and Artist."

Daniel Ludwig, professor of physiology at New York University, has resigned his post to accept appointment as professor of physiology at Fordham University.

Joy B. Phillips, of Morristown, N. J., has been appointed an instructor in zoology at Drew University and will join the college of liberal arts faculty in September. She has been a teaching fellow at Washington Square College of New York University since 1947.

Melville J. Ruggles, formerly with the Department of State, has been appointed director of the East European Fund. Mr. Ruggles has devoted much of his government service to the study of Russian affairs and was assigned to the U. S. Embassy in Moscow from 1946 to 1948. The East European Fund has been established by the Ford Foundation as a non-profit organization to assist recent exiles from the USSR of all nationalities.

LeRoy Scharon, associate professor of geology at Washington University, has been elected chairman of the Mining, Geology, and Geophysics Division of the American Institute of Mining and Metallurgical Engineers and becomes a director ex officio of the institute during his year of service.

Raymond J. Seeger, formerly chief of the Aeroballistics Research Department of Ordnance Laboratory at White Oak, Md., has been appointed to the staff of the Division of Mathematical, Physical and Engineering Sciences of the National Science Foundation. Dr. Seeger is secretary of Section L, AAAS.

An advisory panel has been named to assist the Congressional Atomic Energy Committee in connection with atomic plant expansion. Lewis L. Strauss, former Atomic Energy Commission member, will head the panel. Mr. Strauss is president of the Institute for Advanced Studies at Princeton.

Sidney Weinhouse, of the Lankenau Hospital Research Institute, will be visiting professor of biochemistry for the first summer session, June 23-Aug. 1, in the School of Medicine, University of California at Berkeley. Dr. Weinhouse will give a course on selected topics on intermediate metabolism.

Walter J. Williams, deputy general manager of the AEC, will assume, in addition to his present post, the duties of assistant general manager for manufacturing, vacated Feb. 29 by the resignation of Thomas F. Farrell. James L. Kelchan, formerly assistant director of production, will be assistant to Mr. Williams in both his functions.

#### Education

Ansel Adams, widely known for his photographs of Yellowstone National Park, will conduct a photo workshop July 7–19 and July 21–Aug. 2 in San Francisco. An intensive course in practical and creative photography will be offered. For particulars, write Registrar, 5 Associates, 131 24th Ave., San Francisco 21.

The Gulf Coast Research Laboratory, Ocean Springs, Miss., will open June 10. Research under the direction of A. E. Hopkins, and eight courses of instruction in marine science under the direction of R. L. Caylor, will be offered.

Hebrew Institute of Technology, Haifa, will send a worthy graduate student to the U. S. this summer for two years of study in agricultural engineering at the State College of Washington. The project is jointly sponsored by the Export Division of the Aluminum Company of America, the Institute, The Technion, and Palestine Endowment Funds, Inc., of New York.

Theophile A. Alajouanine, of Saltpetriere Hospital, Paris, has been appointed visiting professor of neurology at the University of Illinois College of Medicine for three months beginning Apr. 1; Hiram T. Langston, who will head the Department of Surgery at the new Chicago State Tuberculosis Sanitarium, has been appointed clinical associate professor of surgery, on a nonsalaried basis; and Mary L. Hemmy, of Washington University, has been appointed head of the new Department of Social work. The Medical School is part of the 305-acre Medical Center on Chicago's near west side, where nine new projects are currently under construction.

Lehigh University has received funds from the American Metal Company for the endowment of a scholarship in honor of Harvey M. Burkey, former chief metallurgist of the company. The first award will be made in September.

The sixth session of the McGill Geography Summer School will be held at Stanstead College, Stanstead, P. Q., June 25-Aug. 2. Special emphasis will be laid upon the Arctic, the Soviet Union, the Far East, and Canada. The staff will include L. Dudley Stamp, S. H. Beaver, and S. W. Woolridge (England); S. McCune (Colgate University); and the following Canadians: P. D. Baird, F. K. Hare, W. F. Summers, J. L. Robinson, and B. Zaborski.

The new Neurophysiological Institute, in Copenhagen, will be dedicated Apr. 16. E. D. Adrian, Master of Trinity College and president of the Royal Society, will give the dedication address. The new institute is sponsored by the Michaelsen, Carlsberg, and Rockefeller foundations, and the Danish government. The Zoophysiological Laboratory, a special section to be devoted to the use of isotopes, will be directed by Professor Ussing.

An Oregon Teacher Education Survey, sponsored by the State Board of Higher Education, will be directed by Earl W. Anderson, president of the NEA higher education department and a member of the education faculty of Ohio State University. Dr. Anderson will spend six months in Oregon.

People's University, Upsala, has arranged a course for English-speaking persons Aug. 1–20. May 10 is the deadline for applications, which should be addressed to "Aspects of Sweden," Upsala. At the Jacobsberg People's College, 30 minutes by train from Stockholm, a course dealing with social and economic development in Sweden will be given Aug. 25—Sept. 9. Applications should reach the Swedish In-

stitute, Kunsgatan 42, Stockholm, by June 1. The International Graduate School of the University of Stockholm offers a special one-year course, beginning in September, for English-speaking students, in political science, economics, and sociology. Applications should be sent to The American-Scandinavian Foundation, 127 E. 73rd St., New York 21.

Stanford University School of Medicine will offer in its illustrated Popular Medical Lectures "The Age of Medical Miracles" (Anthony J. J. Rourke, Apr. 23); and "Natural Childbirth—What It Is and What It Isn't" (Lyman M. Stowe, May 7).

The University of Texas Visual Instruction Bureau is collecting a special film library on petroleum subjects in which oil and oil supply concerns may deposit films for use throughout the industry without charge except a nominal service fee. Individuals and companies having films to add, or those needing films for specific purposes, should communicate with Ernest Tiemann, Division of Extension, Austin 12.

The University of Washington has appointed C. N. Yang, of the Institute for Advanced Study, a special lecturer in the Department of Physics. Beginning Apr. 21, he will give a two-month series of lectures on problems in statistical mechanics. Robert Serber, of Columbia, will lecture on meson theory June 23–July 23.

### Grants and Fellowships

The Arthritis and Rheumatism Foundation has awarded 14 fellowships, totaling \$64,500, to physicians and biochemists in this country and in England for a year's investigation beginning July 1. The only woman in the group, Madeline K. Keech, of the Canadian Red Cross Memorial Hospital, Maidenhead, Eng., will come to Yale to do her research.

The Board on Overseas Training and Research of the Ford Foundation will award up to 100 fellowships to American men and women (under 35) who wish to continue training or research pertaining to Asia, or the Near and Middle East. Awards will be for periods of one to three years, and the work may be done in the U. S. or abroad. For further details and application forms (returnable before May 15), address the board at Room 534, 575 Madison Ave., New York 22.

Hahnemann Medical College and Hospital of Philadelphia is offering \$1000 fellowships in anatomy, bacteriology, biological chemistry, pathology, pharmacology, and physiology, in support of study leading to the M.S. degree. Application forms may be obtained from the chairman, Graduate Committee.

The John and Mary R. Markle Foundation has named 21 medical school faculty members as the fifth group of Scholars in Medical Science. All grants are made direct to the schools at the rate of \$6000 annually for five years, for support of specific scholars selected from candidates nominated by the schools themselves.

The Old Dominion Foundation has given \$5,000,000 to Yale University to aid the liberal arts study program and to restore Connecticut Hall, a national and university landmark; and the Commonwealth Fund will finance special studies in human biology and ecology by a grant of \$200,000.

The University of Wisconsin science writing research assistantship, carrying an allowance of \$1,150 for the academic year, is open to applicants who have a degree in journalism or some scientific field. The University of Wisconsin News Service will answer inquiries.

#### In the Laboratories

New appointments in the Armour Research Foundation of Illinois Institute of Technology include Arthur A. Anderson, Jr., chemist, and John J. Hickerson, development engineer, to the Chemistry and Chemical Engineering Research Department, and Arnold Miller as research physical chemist. Louis E. Marchie, inorganic chemist in the Ceramics and Minerals Research Department, has been made senior chemist.

Atul Products, Ltd., the first dyestuffs and pharmaceutical plant in India, was opened with special ceremonies on Mar. 18 in Bulsar. Built with technical aid from the American Cyanamid Co., which has a 10 per cent financial interest in it but no share in the management, the \$3,500,000 plant will have a capacity of 4 million pounds of azo and sulfur dyes yearly. Aureomycin and sulfa drugs will also be produced. (Atul is from the Hindu word meaning "incomparable.")

Chemstrand Corporation has appointed the following technicians to the research staff at its new Acrilan project in Decatur, Ga.: S. Jack Davis, of Callaway Mills; Frank B. Lutz, of Millville Manufacturing Company; and Charles H. Apperson, of Tennessee Coal and Iron Company.

The following persons from abroad recently visited the USDA Eastern Regional Research Laboratory, Philadelphia: L. I. Pugsley, Ontario Department of National Health and Welfare; C. H. Lea, Low Temperature Laboratory, Cambridge, Eng.; A. B. G. Grever, United Can Makers, Ltd., Nijmegan, The Netherlands; J. van der Vliet, Philips-Roxane, Ltd., Bussum, The Netherlands; P. J. van der Laan, Royal Yeast Factory and Distillery, The Hague; D. A. A. Mossel and M. van Eekelen, Central Institute for Nutrition Research, Utrecht.

Daniel J. Cavanaugh and Arthur E. Heath, radiochemists, have been added to the staff of the Chemistry Department, Nuclear Instrument & Chemical Corporation, to work on Nuclear's biosynthesized carbon 14-labeled sugars and algae program. Expanded radioisotope applications have recently compelled the company to enlarge its plant by 20 per cent.

Louis Koenig, industrial research chemist, of Stanford Research Institute, Norman C. Penfold, super-

visor of automotive and engine fuels and lubricants research, and Trevor Clark, director of the Division of Military Research and Delevopment, have been named associate directors of Southwest Research Institute. Eight specialists in physics, geophysics, and electronics have been added to the staff, and in a further expansion of its general program the institute has adopted a professional development program, of which C. A. Culver, authority on acoustics, will be dean. To encourage study by personnel in their chosen research fields, half the tuition charges for college work will be paid by the institute and its affiliates, The Southwest Foundation for Research and Education (formerly the Foundation for Applied Research) and the Institute of Inventive Research.

# Meetings and Elections

The American Academy of General Practice, meeting in Atlantic City in March, installed Rufus B. Robins, of Camden, Ark., as president and named Ulrich R. Bryner, of Salt Lake City, president-elect.

At its meetings in Buffalo and Milwaukee the American Chemical Society awarded diplomas certifying 50 years' loyal support of the society and its activities to 53 chemists and chemical engineers. Irving Langmuir headed the largest group (New York—nine members). Among others honored were William C. Geer, P. W. Tompkins, Otto S. Marckworth, Edward Mallinckrodt, Jr., Alexander Silverman, Hobart H. Willard, George R. Carr, Richard Fischer, and Lee F. Hawley. Canada was represented by John F. Snell, of McGill University.

The Centre National de la Recherche Scientifique, Paris, will be the locale this spring of three symposia, organized with the help of the Rockefeller Foundation, in which U. S. scientists will participate: The Fondements et Applications de la Theorie du Risque en Econometrie, May 12-17, to which Milton Friedman, Jacob Marschak, and Paul A. Samuelson have been invited; Evolution Chez les Plantes, May 15-20, to which Theodor Just and W. M. Heisey have been invited; and Quelques Aspects Modernes des Phenomenes Electrolytiques Intervention du Solvant dans l'Electrolyse, May 23-27, to which Benton B. Owen has been invited. A CNRS Symposium on Leonardo da Vinci, to be held in Paris July 4-7, will be attended by the following from the U.S.: George Sarton (as president of the Union Internationale d'Histoire des Sciences), Henry O. Guerlac, Giorgio de Santillana, and Arthur K. Watson.

The second International Congress of Biochemistry will be held in Paris July 21–27. Among U. S. participants in the seven symposia will be S. Granick, M. S. Shorb, E. L. R. Stokstad, H. Borsook, J. S. Fruton, F. Haurowitz, D. Rittenberg, E. S. G. Barron, D. E. Green, F. Lipmann, S. Ochoa, C. H. Li, V. du Vigneaud, E. Chargaff, B. D. Davis, I. C. Gunsalus, E. E. Snell, J. Dufrenoy, W. W. Umbreit, S. A. Waksman, and G. Pincus. For further informa-

tion, address J. E. Courtois, Faculte de Pharmacie, 4. Ave. de l'Observatoire, Paris (VI°).

At a meeting in Rome, the International Mathematical Union elected Marshall H. Stone as its first president. Dr. Stone is Andrew MacLeish distinguished service professor and head of the Department of Mathematics at the University of Chicago.

#### British Commonwealth News

W. C. Allen, who has been on the staff of the Commonwealth Solar Observatory at Canberra since 1927, has been appointed to the newly created Perren chair of astronomy at University College, University of London. In his new position Dr. Allen will be actively associated with the Observatory at Mill Hill.

The Association of Special Libraries and Information Bureaux (Aslib) will establish a consultant service in the special library and information field with funds granted by the Department of Scientific and Industrial Research.

The 29th meeting of the Australian and New Zealand Association for the Advancement of Science will take place in Sydney, N. S. W., Aug. 20–27, under the presidency of Kerr Grant. Chairman of the New South Wales Organizing Committee is K. W. Street, lieutenant governor and chief justice of New South Wales. The University of Sydney will play an important part in the meetings, and A. P. Elkin, of the Anthropology Department, will function as deputy chairman; J. M. Vincent, of the School of Agriculture, as local honorary secretary; and K. O. Campbell, also of the School of Agriculture, as local honorary treasurer.

K. N. Bahl, who resigned the chair of zoology at the University of Lucknow last September, has been appointed vice chancellor of Patna University. Professor Bahl has not only had a distinguished career in research and teaching at Lucknow during the past 30 years; he has also served as president of the Zoological Society of India, foundation fellow of the National Institute of Sciences, and as a member of the University Commission of the Government of India.

B. K. Blount, at present director of Scientific Intelligence in the Ministry of Defense, has been appointed deputy secretary of Scientific and Industrial Research, to assist Ben Lockspeiser and to relieve him of some of the increasing administrative burdens.

At the British Commonwealth Scientific Conference delegations of scientists and research administrators from the United Kingdom, Canada, South Africa, New Zealand, Southern Rhodesia, India, Pakistan, Ceylon, and Australia assembled at Canberra Feb. 18–21, and at Melbourne Feb. 26–Mar. 7 to discuss closer collaboration among the British commonwealth nations in scientific activities. The four days between sessions were spent touring the sheep-grazing and agricultural lands that separate the two cities. Among the many subjects which the 38 scientists (including

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an observer from the U.S.) considered were joint action with U. N. agencies, especially in regard to world food supplies and medical research; developments in industrial microbiology, beneficiation of lowgrade ores; utilization of solar energy; agricultural engineering; and national organization of research. As in this country, the shortage of scientific and technological manpower was deemed a problem of increasing gravity, upon the solution of which optimum progress is obviously dependent. Preoccupation with the practical applications of science—so evident in the resolutions adopted and in reports of delegations to their respective governments-reflects the current concern with economic problems and prompts a question regarding the status of basic research in the British Commonwealth.

D. B. Waters, who has been with the United Kingdom Scientific Mission in Washington, has been appointed officer-in-charge of the Scottish branch of the Road Research Laboratory (DSIR), where he succeeds R. S. Millard, who has been made head of the bituminous section of the Materials Division of the laboratory.

#### Recent Deaths

George A. Alden (60), pathologist, Overbrook, Pa., Mar. 17; Isaac Apperman (55), internist, New York, Mar. 16: Horace R. Bassford (62), of Montelair, N. J., actuary, Ft. Lauderdale, Fla., Mar. 12; Reuben B. Bauer (56), communications expert, Brooklyn, N Y., Mar. 11; Albert J. Bell (-), of Cincinnati, pediatrician, Naples, Fla., Feb. 24; Eugene B. Bennett (70), stock breeder, Middlebury, Conn., Feb. 23; Hans H. Blache (77), Diesel engine expert, Copenhagen, Mar. 17; George H. Black (78), educator, Palo Alto, Calif., Feb. 24; C. E. Bloch (79), pediatrician, Copenhagen, Feb. 11; Samuel A. Brown (78), of Port Washington, N. Y., physician, Hobe Sound, Fla., Mar. 16; Joseph S. Caldwell (73), plant physiologist, Riverdale, Md., Feb. 18; Charles B. Carlson (68), engineer, West Orange, N. J., Feb. 10; John F. Casey (66), physician, Boston, Mar. 5; Felix Castellanos (75), educator, Guatemala City, Mar. 4; Werrett W. Charters (77), of Maple City, Mich., educator, Livingston, Ala., Mar. 8; Louis Cohen (52), clinician, Philadelphia, Feb. 22; Edwin F. Cone (84), metallurgist, New York, Mar. 18; Albert S. Cook (79), educator, Baltimore, Mar. 10; Frank G. Cooper (86), stomatologist, Philadelphia, Mar. 4; Edward L. Corbett (74), physician and patent lawyer, New York, Mar. 17.

Henry D. Dakin (72), chemist, Scarborough-on-Hudson, N. Y., Feb. 10; Konrad Dobriner (50), biochemist, New York, Mar. 10; Horace Dowie (79), electrical engineer, Chatham, N. J., Mar. 11; Felix Ehrenhaft (73), physicist, Vienna, Mar. 4; William B. Fite (82), mathematician, New York, Mar. 1; Clarence B. Flint (72), of Hinsdale, Ill., chemist, Vero Beach, Fla., Feb. 14; Kenjiro Fujii (86), cytologist, Tokyo, Jan. 11; Domingo Galdos (79), civil engineer, Havana, Mar. 3; Frederick W. Hackstaff (69), mechanical engineer, Manhasset, N. Y., Feb. 10; Frederic R.

Hamilton (70), educator, en route from South Africa to New York, Feb. 19; Solomon J. Harwi (86), civil engineer, Bayonne, N. J., Mar. 17; Hubert D. Henderson (61), political economist, London, Feb. 22; Herbert E. Hollander (54), of New York, surgeon, Miami Beach, Fla., Mar. 5; Tasker Howard, Jr. (39), economist, Brooklyn, N. Y., Feb. 21; John A. Hugo (64), pathologist, Wilkes-Barre, Pa., Mar. 3; Frank H. Hustead (71), physician, Philadelphia, Mar. 2.

Morris W. Kellogg (79), refinery engineer, New York, Feb. 22; Rae D. Landy (66), retired Army nurse, Cleveland, Mar. 5; Eugene B. Levine (38), cardiologist, Los Angeles, Feb. 26; Ralph S. Lillie (76), physiologist, Chicago, Mar. 19; A. D. Lindsay (72), educator, Keele, Eng., Mar. 18; Charles-Francis Long (54), physician, Philadelphia, Feb. 28; A. L. MacNabb (56), veterinarian, Guelph, Ontario, Feb. 16; Antonia C. Maury (85), astronomer and naturalist, Hastings-on-Hudson, N. Y., Jan. 8; Tristram W. Metcalfe (71), educator, New York, Feb. 24; John Millis (93), engineer, Cleveland, Mar. 20; John R. Mohler (76), veterinarian, Washington, D. C., Feb. 28; Walter W. Morey (70), developer of the teletypesetter, Los Angeles, Mar. 9; Charles A. Muller (58). electrical engineer. New York, Mar. 8.

Atilio Narancio (70), physician, Montevideo, Feb. 22; Clyde L. Patch (64), herpetologist, Ottawa, Feb. 11; Mildred Ragan (61), chemist, Washington, D. C., Mar. 3; Benjamin L. Rand (96), of Remington Rand, Inc., North Tonawanda, N. Y., Feb. 27; Richard G. Read (34), Diesel engine expert, Winter Park, Fla., Feb. 18; George B. Reitz (61), surgeon, Brooklyn, N. Y., Feb. 23; Bryan A. A. Rice (57), ceramist, Rochester, N. Y., Mar. 13; George Roemmert (59), physician, New York, Mar. 12; Heyman Rosenberg (78), of New York, inventor, Hollywood, Fla., Feb. 29; Oscar Rosenzweig (53), hydraulic engineer, Philadelphia, Mar. 4.

Charles Sherrington (94), neurophysiologist, Eastbourne, Eng., Mar. 4; Nevil V. Sidgwick (78), chemist, Oxford, Eng., Mar. 16; Alexander G. Souden (44), chemist, Summit, N. J., Feb. 21; Matthew Steel (72), biochemist, Kew Gardens, N. Y., Mar. 15; Donald C. Stockbarger (56), physicist, Belmont, Mass., Feb. 23; Harry Stuckert (69), gynecologist, Baederwood, Pa., Mar. 3; William S. Sutherland (56), ophthalmologist, Philadelphia, Mar. 14; Nelle Swartz (70), social worker, New York, Mar. 5; John M. Thomas (82), educator, Rutland, Vt., Feb. 26; William R. Thomson (79), surgeon, New York, Mar. 19; Lillia M. D. Trask (78), former librarian, Rockefeller Institute of Medical Research, Vineyard Haven, Mass., Feb. 9; Henry W. Turner (79), veterinarian, New Hope, Pa., Feb. 25; Robert J. Vane (59), statistician, Jamaica, N. Y., Mar. 11; Charles C. Ward (60), of Plattsburg, N. Y., educator, Montreal, Feb. 27; Selden G. Warner (67), physicist, chemist, and film expert, West Orange, N. J., Feb. 27; Adolph L. Weil (76), former president, General Petroleum Corporation, Los Angeles, Feb. 25; James S. Wiant (51), plant pathologist, Summit, N. J., Mar. 15.

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