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# Thorstein Veblen...on the place of science

"In creative art, as well as in critical taste, the faltering talent of Christendom can at the best follow the lead of the ancient Greeks and the Chinese. In myth-making, folklore, and occult symbolism many of the lower barbarians have achieved things beyond what the latter-day priests and poets know how to propose. In political finesse, as well as in unreasoning, brute loyalty, more than one of the ancient peoples give evidence of a capacity to which no modern civilized nation may aspire.

"To modern civilized men, especially in their intervals of sober reflection, all these things that distinguish the barbarian civilizations seem of dubious value... futile in comparison with the achievements of science. They dwindle in men's esteem as time passes. This is the one secure holding-ground of latter-day conviction, that 'the increase and diffusion of knowledge among men' is indefeasibly right and good. When seen in such perspective as will clear it of the trivial perplexities of work day life, this proposition is not questioned within the horizon of western culture, and no other cultural ideal holds a similar unquestioned place in the convictions of civilized mankind."

—*The Place of Science in Modern Civilization, 1906*

*THE RAND CORPORATION, SANTA MONICA, CALIFORNIA*

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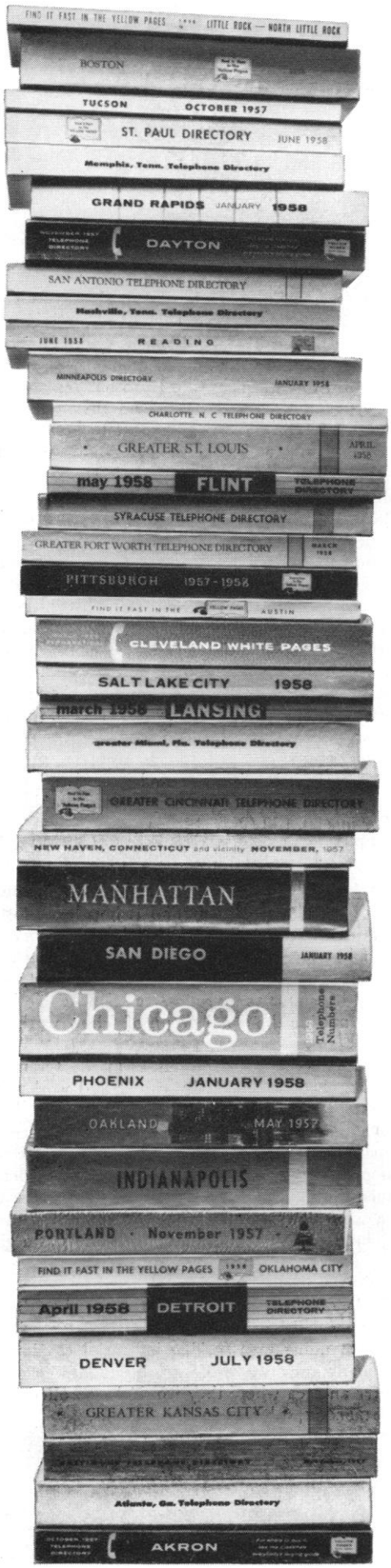


# 1 in 35,000,000

## How the telephone switching system sorts numbers in seconds

When you dial out of town, the telephone switching system performs an amazing feat. It sorts out the one other number in 35 million you want, and connects you to it in seconds. The other telephone may be thousands of miles away.

Bell Laboratories engineers endowed this great switching network with almost superhuman capabilities. As you dial, the machine listens, remembers, figures out the best route, makes connections, alerts, reports, even corrects itself. If it detects trouble on the way, it files a report, then chooses other circuits and goes on to complete your call. All you are aware of is the end product—the completed call.

Yet at Bell Telephone Laboratories, switching engineers see the present system as only a beginning. Ahead they see—and are developing—new systems vastly more flexible and capable than today's. Nowhere in telephone technology is the challenge greater. Nowhere are dreams coming true faster.

**BELL TELEPHONE LABORATORIES**

WORLD CENTER OF COMMUNICATIONS RESEARCH AND DEVELOPMENT

These Bell Telephone System directories list some of the 35,000,000 telephones now linked by the Direct Distance Dialing system developed at Bell Laboratories. In seconds, this unique machine sorts out and connects you with precisely the number you want.

# Meetings

## Sedimentology

The fifth International Congress of Sedimentology met in Geneva and Lausanne, Switzerland, 2–7 June, under the presidency of Carl Correns of Göttingen, Germany. Approximately 150 delegates from 19 countries attended, the largest groups coming from France, Switzerland, Holland, Germany, the United States, the Soviet Union, and Italy. Two and a half days were devoted to sessions, the rest to well-planned field trips. Added to the latter were four days of postsession excursions in the Alps between Lake Geneva and Bern. The friendly, informal leadership of Augustin Lombard and Arnold Bersier, hosts respectively at Geneva and Lausanne, added much to the spirit of cordial relations which existed, and there was no sign of past or present international strife. The languages of the session were principally French and English, plus a considerable amount of German.

The principal topic of discussion in lectures and field trips was the origin of the Flysch and Molasse types of sedimentation, which represent respectively the deep trough facies formed in front of the youngest Alps and the overlying alluvial fans formed after the deep basins had been filled. Similar facies have been recognized in many other mountain ranges. One of the most interesting and still unanswered questions is the extent to which turbidity currents supplied sediments to the Flysch; in the discussion on this subject Kuenen of Holland played a leading part. To many of us at the congress, the alternation between the deep-water shales and the breccias or conglomerates seemed to be the most conspicuous feature of the Flysch shown to us. This would appear to indicate the importance of submarine slumping along the sides of the deep trough. Graded bedding, found less commonly, was evidence of occasional turbidity currents.

Sessions devoted to recent sediment studies also aroused interest. Bezrukof of the U.S.S.R. gave some of the results of the recent Russian expeditions in the Pacific. The results included obtaining the longest cores on record (34 meters), the deepest cores (about 10,000 meters in the Kuril trench), and the greatest sounding depths (10,990 meters in the Mariana trench). As in many other deep-water samples, an alternation between fine clays and coarse sediments was found.

Other papers attempted to compare recent sediments with ancient. The convening of specialists in the study of recent and old sediments to discuss the geological interpretations of ancient rocks proved to be a very important function of this congress.

The next meeting will be held in Copenhagen, 15–25 Aug., 1960, in connection with the International Geological Congress.

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## Vertebrate Speciation

A grant has been made by the National Science Foundation to the University of Texas to assist travel by graduate students to a Conference on Vertebrate Speciation to be held in Austin, Tex., 27–31 October. Persons wishing further information should contact W. Frank Blair, Department of Zoology, University of Texas, Austin 12, Texas.

## Insulin in Psychiatry

An International Conference on the Insulin Treatment in Psychiatry has been arranged 24–25 October for the purpose of presenting recent advances in the basic aspects and the clinical uses of Sakel's discovery. The meeting will take place

at the New York Academy of Medicine, 5th Ave. and 103 St., New York. It is cosponsored by S. Bernard Wortis, professor of psychiatry and neurology, New York University; D. Ewen Cameron, professor of psychiatry, McGill University; and Jacques S. Gottlieb, professor of psychiatry, Wayne State University. All those interested are invited to attend. For further details write to Dr. M. Rinkel, 479 Commonwealth Ave., Boston 15, Mass., or Dr. A. K. Bernath, 985 5th Ave., New York 21, N.Y., or Dr. H. E. Hemwich, Galesburg State Research Hospital, Galesburg, Ill.

## Forthcoming Events

### October

*24–25.* Taxonomic Consequences of Man's Activities, symp., St. Louis, Mo. (H. C. Cutler, Missouri Botanical Garden, St. Louis.)

*30–1.* American Assoc. of Textile Chemists and Colorists, 37th natl. conv., Chicago, Ill. (J. G. Kelley, E. I. duPont de Nemours & Co., Inc., 7 South Dearborn St., Chicago 3.)

*31–1.* Central Soc. for Clinical Research, 31st annual, Chicago, Ill. (A. S. Weisberger, CSCR, Suite 1215, 25 East Washington St., Chicago.)

### November

*2–7.* Radiology, 6th Pan American cong., Lima, Peru. (M. Lesende, Inter-American College of Radiology, Tucuman 1516, Buenos Aires, Argentina.)

*3–4.* Italian Soc. of Nuclear Biology and Medicine, 3rd cong., Florence, Italy. (Segreteria della Societá Italiana di Biologia e Medicina Nucleare, Clinica Medica, Pisa, Italy.)

*4.* Use of 650 and 704 Computers for Structure Analysis, conf., Pittsburgh, Pa. (G. A. Jeffrey, Dept. of Chemistry and Physics, Univ. of Pittsburgh, Pittsburgh 13.)

*4–7.* American Soc. of Tropical Medicine, Miami Beach, Fla. (R. B. Hill, 3575 St. Gaudens Rd., Miami 33.)

*4–11.* International North Pacific Fisheries Commission, 5th annual (by invitation), Tokyo, Japan. (R. I. Jackson, 209, Wesbrook Building, Univ. of British Columbia, Vancouver 8, Canada.)

*5–7.* Society for Applied Spectroscopy, annual, New York, N.Y. (P. Lublin, Sylvania Electric Products Inc., Bayside, N.Y.)

*5–7.* Society of Rheology, annual, Philadelphia, Pa. (W. R. Willets, Titanium Pigment Corp., 99 Hudson St., New York 13.)

*6–7.* Lead Hygiene Conf., Chicago, Ill. (M. Bowditch, Lead Industries Assoc., 60 E. 42 St., New York, 17.)

*6–7.* Nuclear Science, 5th annual, San Mateo, Calif. (H. Pratt, IRE, 1 E. 79 St., New York 21.)

*6–8.* Geochemical Soc., St. Louis, Mo. (K. B. Krauskopf, Geology Dept., Stanford, Calif.)

*6–8.* Geological Soc. of America, St. Louis, Mo. (H. R. Aldrich, 419 W. 117 St., New York 27.)

*6–8.* Gerontological Soc., 11th annual scientific meeting, Philadelphia, Pa. (N. W. Shock, Baltimore City Hospitals, Baltimore 24, Md.)

*6–8.* Paleontological Soc., St. Louis, Mo. (Miss K. V. W. Palmer, 109 Dearborn Pl., Ithaca, New York.)

*6–8.* Society of Economic Geologists, St. Louis, Mo. (H. M. Bannerman, U.S. Geological Survey, Washington 25, D.C.)

*8.* Society for the Scientific Study of Sex, 1st annual, New York, N.Y. (R. V. Sherwin, 1 E. 42 St., New York 17.)

*8–13.* International Rubber Conf., Washington, D.C. (B. S. Garbey, Jr., Pennsalt Chemical Corp., 813 Lancaster Pike, Wayne, Pa.)

*10–12.* American Petroleum Inst., 38th annual, Chicago, Ill. (API, 50 W. 50 St., New York 20.)

*10–12.* Physics and Medicine of the Atmosphere and Space, intern. conf. (by invitation), San Antonio, Tex. (Southwest Research Center, 331 Gunter Bldg., San Antonio.)

*10–13.* American Dental Assoc., Dallas, Tex. (H. Hillenbrand, 222 E. Superior St., Chicago, Ill.)

*12–14.* Society for Experimental Stress Analysis, annual, Albany, N.Y. (W. W. Murray, P.O. Box 168, Central Square Sta., Cambridge 39, Mass.)

*12–15.* Society of Naval Architects and Marine Engineers, 66th annual, New York, N.Y. (W. N. Landers, SNAME, 74 Trinity Pl., New York 6.)

*16–21.* Radiological Soc. of North America, Chicago, Ill. (D. S. Childs, 713 E. Genesee St., Syracuse, N.Y.)

*16–23.* Scientific Information, intern. conf., Washington, D.C. (Mrs. M. Sheppard, Intern. Conf. on Scientific Information, Natl. Acad. of Sciences–Natl. Research Council, 2101 Constitution Ave., Washington 25.)

*17–20.* Conference on Magnetism and Magnetic Materials, Philadelphia, Pa. (H. B. Callen, Dept. of Physics, Univ. of Pennsylvania, Philadelphia.)

*18–20.* Air Pollution, 1st natl. conf., Washington, D.C. (Dept. of Health, Education, and Welfare, U.S. Public Health Service, Washington 25.)

*(See issue of 19 September for comprehensive list)*

# Letters

## Radioactive Wrist Watches

J. L. Haybittle, of the Radiotherapeutic Center at Addenbrooke's Hospital in Cambridge, England, has reported in *Nature* (17 May 1958) that some luminous-dial wrist watches contain sufficient radium to subject their owners to nearly two-thirds the maximum permissible level for exposure of hands and forearms. According to Haybittle, one watch, having an estimated radium content of 2.2 μc, recorded on a film placed in contact with the back of the watch a dose rate of 8 mr/hr.

During the past year we have been investigating the degree of radioactivity of luminous-dial wrist watches as these were made available to us by their owners. Watches were found to vary more than tenfold in their activity. Of 20 watches examined, 12 showed activity not exceeding 1 mr/hr at a distance of approximately 1 in. from the face of the watch, four registered between 1 and 5 mr/hr, two between 5 and 8 mr/hr, and two between 8 and 10 mr/hr.

With an activity of 8 mr/hr at a distance of 1 in., it may be calculated that at a distance of 8 in. a wrist watch worn 24 hours a day can deliver 1.1 r a year; this is the dosage that might be delivered to the gonads by the most active watches when the watch is worn on the wrist in a position facing the gonads. The least active watches could deliver approximately one-tenth this activity, or 110 mr/yr (at 8 in.); at 12 in. this would be reduced to about 49 mr/yr, in good agreement with the dosage of 40 mr/yr estimated by Libby in *Science* [**122**, 57 (1955)] for a wrist-watch radiation source at an average distance of 12 in. from the central body, including sex organs. The potentially harmful magnitude of the radiation from the most active watches, corresponding to 5 rem in about 5 years, may be judged in the light of the recommendation by the International Commission on Radiation Protection that no one should receive a dose in excess of 5 rem by age 30.

When one further considers that this radiation is several times greater than natural background radiation and exceeds by more than 100 times that presently received from radioactive fallout, the potential hazard to the wearer of a luminous-dial wrist watch raises the question as to whether the small benefit that may be received from such a watch is worth the hazard.

GRAFTON D. CHASE
ARTHUR OSOL
*School of Chemistry, Philadelphia College of Pharmacy and Science, Philadelphia, Pennsylvania*

## Drug Synergism

In the report entitled "Drug synergism (potentiation) in pain relief in man: papaverine and morphine," by Macris, Gravenstein, Reichle, and Beecher [*Science* **128**, 84 (1958)], the authors found "that less pain relief is obtained from morphine not preceded by papaverine." In their interpretation of this finding the authors conclude that "synergism in the relief of pathological pain has been clearly demonstrated with analgesic drugs." The authors also point out that papaverine alone has no analgesic power.