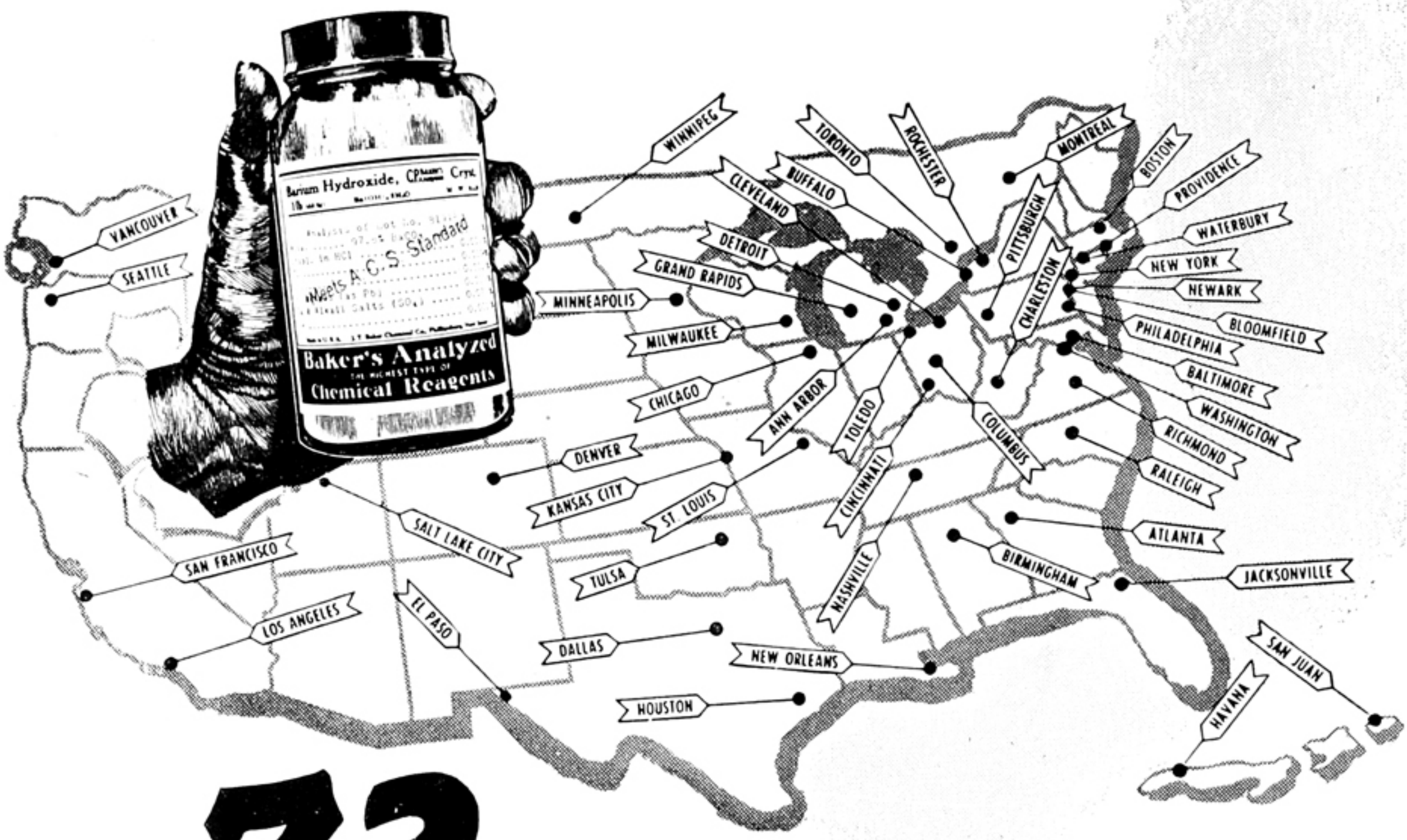
The PUGET SOUND CHEMIST

Bulletin of the PUGET SOUND SECTION
of the AMERICAN CHEMICAL SOCIETY

IN THIS ISSUE

MARCH, 1951



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The PUGET SOUND CHEMIST

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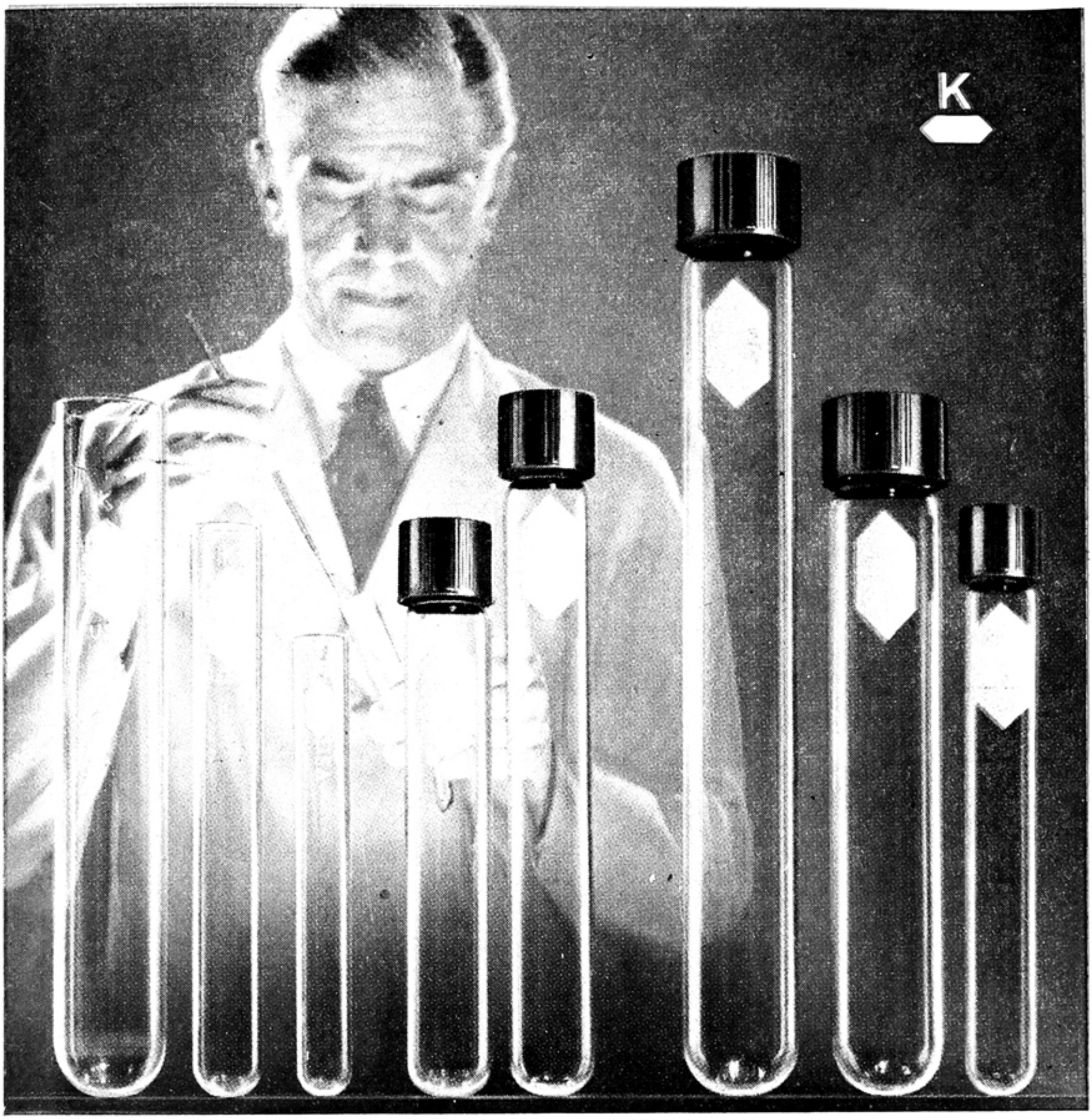

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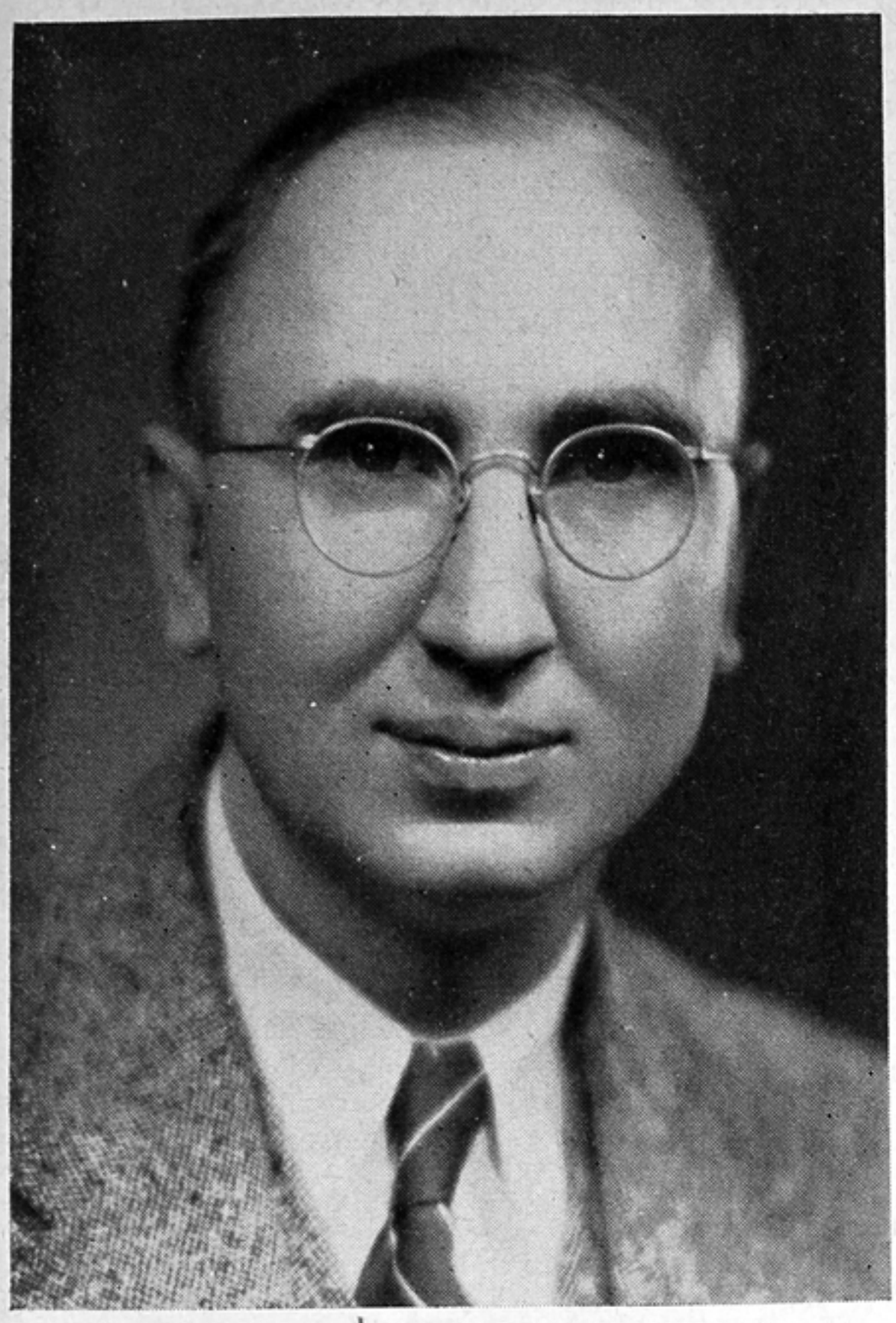
MARCH SPEAKER



Kenneth A. Kobe

MARCH MEETING

A. C. S. and A. I. Ch. E.

DR. KENNETH A. KOBE

Professor of Chemical Engineering
University of Texas

will speak on

Submerged Combustion

(See Jan. and Feb. P. S. C.)

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APRIL MEETING

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TIME

Monday, April 9th, 8:00 P. M.

PLACE

131 Bagley Hall

SPEAKER

PROF. H. G. CASSIDY
Yale University

Topic: Nature and Use of Adsorption Chromatography

MAY MEETING

Will Be Held in April to Accommodate a Tour Speaker

FRIDAY, APRIL 27

DR. T. H. CHILTON

National Secretary of
A. I. Ch. E. S.

Will Address the A. I. Ch. E. S. on

APRIL 6

REGIONAL MEETING

Will Be Held on
University of Washington Campus

JUNE 8-9.

Abstracts and Titles of Paper Should Be Sent to

Dr. David Ritter, Bagley Hall

Before April 15.

APRIL SPEAKER

HAROLD G. CASSIDY

Biography

Harold G. Cassidy started his college work at the Municipal University of Akron, which he attended part-time while working in the B. F. Goodrich Rubber Company. In 1928 he entered Oberlin College as a junior and finished with a B. A. in 1930 and a M. A., 1932, staying on for an additional year as a teaching fellow. He intended at first to go into medicine, but the influence of Professor (now President) H. E. Simmons at Akron and Professor Harry N. Holmes of Oberlin led him into chemistry and teaching.

For the period 1933 to 1936 he was employed as a chemist with The William S. Merrell Pharmaceutical Company of Cincinnati, working with vitamin A and D products, and later acting as an assayist for certain biologically standardized U.S.P. drugs.

On the way to Yale, for further work, he paused for one year to teach second-year chemistry at Oberlin College, and then entered the Graduate School at Yale University in 1937. He was appointed an instructor in 1938 and taught first-year chemistry, received the Ph.D. degree in 1939 and began to teach organic chemistry. He was appointed assistant professor, 1949, and associate professor, 1948. Mr. Cassidy also teaches a graduate course in methods of organic chemistry.

Mr. Cassidy has carried out investigations and written on separation processes using adsorption, chiefly chromatographic processes; on ion exchange on amino acid adsorption, and on polymers capable of exchanging electrons with atoms or molecules in contact with them.

With Mr. James English, Jr., Mr. Cassidy has written a modern textbook of organic chemistry; English and Cassidy, "Principles of Organic Chemistry"; McGraw-Hill, 1949. Mr. Cassidy has written a monograph, "Adsorption and Chromatography," Vol. V of Inter-sciences series, "Technique of Organic Chemistry," edited by Dr. Weissberger. Mr. Cassidy is A. C, S. delegate from the New Haven Section to the Connecticut Technical Council; Fellow of Berkeley College in Yale University; Fellow of the New York Academy of Sciences, and a member of a number of scientific societies.

MINUTES OF THE FEBRUARY MEETING of the PUGET SOUND SECTION of the AMERICAN CHEMICAL SOCIETY

The meeting was called to order by Dr. E. C. Lingafelter, Chairman, at 8 p. m.

The chairman announced that the minutes of each meeting will be published in the Puget Sound Chemist.

The Nominating Committee reported the names of Mr. A. H. Hooker as councilor for a four-year term and Dr. E. G. King as alternate councilor for a three-year term. As there were no further nominations from the floor, the motion was made and carried that nominations be closed.

The chairman instructed the secretary

to cast a unanimous ballot in favor of the two unopposed nominees.

The members in attendance voted to approve the proposed change in Part VI, Section 4, of the Section's By-Laws which specifies the method of ballot in those cases where there is only one unopposed nominee.

The chairman announced June 8th and 9th as the dates set for the Northwest regional meeting, with April 15th the deadline for receiving papers for the meeting.

The speaker of the evening, Dr. H. K. Benson of the University's Department of Chemistry and Chemical Engineering was introduced by Mr. C. V. Smith, program chairman.

Dr. Benson's talk on the "Chemical Utilization of Coal" explained in excellent summary the possible uses of a very large natural resource of this region.

The meeting adjourned at 9:30 p. m., followed by a social hour.

—Jim C. Drury, Secretary

●

HELP YOUR LOCAL SECTION

When an application for A. C. S. membership is sent to Washington, D. C., by the **Secretary or Membership Chairman** of the Section, the Section receives $2.50 for each member accepted, with the exception of students.

If any member who signs an application as a reference would advise where to send the application, it would help. In February alone of this year, our Section lost $27.50 for the above reason.—Jim Drury, Secretary.

●

A PROPOSED AMENDMENT TO LOCAL SECTION BY-LAWS

Under the amended by-laws of the national society, which became effective January 1, 1951, all sections belonging to a local organization of technical societies shall specifically so state in the local section by-laws.

To conform to the national by-laws, the following motion to amend the by-laws of this section was proposed and approved by the executive committee:

"XIII. Affiliation with local organizations composed of scientific, engineering and/or technical societies:

Section I. The Puget Sound Section may affiliate with the Puget Sound Engineering Council in accordance with the provisions of the by-laws of the American Chemical Society."

●

NEW MEMBERS

BARNES, Edwin E.
3102 N. 25th St., Tacoma 7, Wash.

BEAN, William
7838 S. Tacoma Way, Tacoma 9, Wash.

BURTNER, Dale C.
1211 E. 70th St., Seattle 5, Wash.

EASTLAND, Edward M.
1068 E. Thomas St., Seattle 2, Wash.

EDGE, Dexter, Jr.
c/o Hooker Electrochemical Co.,
Tacoma, Wash.

ELDEN, Richard E.
Rt. 2, Box 164, Woodinville, Wash.

FILCHAK, John A. J.
2530 South Fawcett, Tacoma, Wash.

GORDON, Lyle J.
4067 6th Ave. N. E., Seattle 5, Wash.

GROVES, Donald C.
610½ 8th Apt. 3, Hoquiam, Wash.

HENDRICKSON, Joe G.
4757 22nd N. E., Seattle 5, Wash.

JENSEN, Philip W.
582 Baker Hall, University of Washington, Seattle 5, Wash.

LEIGHTON, Frederick, Jr.
Apt. No. 8, Holly Hill Apts.
Shelton, Wash.

LEWIS, George J., Jr.
Oceanographic Labs., University of Washington, Seattle 5, Wash.

MATICH, Raymond G.
1414 Seneca St., Seattle 1, Wash.

MILLARD, George E.
1324 Dearborn St., Seattle 44, Wash.

OSGOOD, Harlow S.
Summit Ave. and Columbia St.,
Seattle 4, Wash.

PIGOTT, George M.
4326 9th Ave. N. E., Seattle 5, Wash.

REEDER, S. Darrell
Oceanographic Laboratories
Friday Harbor, Wash.

WAMESLY, Welcome
Edmonds, Wash.

WHAT TOMORROW?

Not many weeks ago my son, Tim, who is eight years old, said something to me which has since then given me a great deal of serious thought . . .

For several days we had been planning on a short vacation. To my delight I discovered that Tim was enjoying the anticipation of the trip as much as I. So we took him into our planning. The night before we were to leave, he came to me, fragrantly clean, his blue eyes sparkling, and he said, "Dad, thank you for tomorrow."

All his sure hope of the future had found its way to me. And I felt quite suddenly incapable of taking any sort of thanks for a tomorrow. Then I began to realize that I wasn't alone in that predicament. How can one or many make good this promise of a tomorrow? It will take strong words said many times to bring about the strength and goodness necessary for such accomplishment . . .

—Thomas H. Williams

(The foregoing item was published in the February 3 **Saturday Evening Post** by our own Tom Williams of **Northwest Laboratories**, prominent consulting chemists and engineers.)

●

One month from now we will celebrate the 34th anniversary of the crusade to make the world safe for democracy. One of the principal arguments against the Germans was their policy of peace-time conscription.

●

SIGMA XI MEETING

Dr. George Scatchard will speak on **"Molecular Interactions in Protein Solutions"** at 8 p. m. on Wednesday evening, March 14, in Room 131, Bagley Hall, University of Washington. **All interested persons are cordially invited.**

●

To Mr. James Drury, Secretary:

. . . I appreciate receiving the **Puget Sound Chemist.** The advertisers may be interested to know that I have utilized some of their ads to their advantage.—Donald F. Anderson, Yakima, Wash.

SEATTLE NEWS

Dr. Sigurdur R. Petersson of the University Research Institute of Reykjavik, Iceland, a participant in a technical assistance project sponsored by the Economic Cooperation Administration, is now studying at the Seattle Technological Laboratory of the Fish and Wildlife Service.

Dr. Petersson is particularly interested in the control of canned foods and in the microbiological assay of vitamins. His work in Seattle, which will keep him here until next June, will place primary emphasis on the assay of biotin, niacin, riboflavin, and vitamin B_{12}.

On arrival in this country last October, Dr. Petursson visited College Park, Maryland; Woods Hole, Boston, Halifax, Chicago, Los Angeles, San Francisco, Astoria, and Vancouver, B. C. After leaving Seattle, he plans to visit New Orleans, Washington and New York before returning to Iceland.

—Bruce Sanford

●

Gerald Freeman, Senior Representative to the Puget Sound Engineering Council in 1950, has been elected Treasurer of the Council for 1951.

●

OLYMPIA NEWS

Cathodic Protection

Electrochemical protection of underwater steel construction against corrosion has been used for a number of years. The Canadian government has been using it on moored naval vessels for the past three years, and oil companies in the Persian Gulf, Caribbean, and Gulf of Mexico have found it serviceable for docks and stationary rigs.

In the spring of 1949 the Maritime Commission, in cooperation with the Dow Chemical Company, undertook an extensive study of cathodic protection of the underwater hulls of its vessels to determine the most efficient and economical method. Last November the technique was applied to one of the ships moored in Budd Inlet at Olympia, under the direction of Mr. W. E. Spofford,

Olympia Reserve Fleet Superintendent, and Mr. A. C. Himmler, Technical Advisor for the Commission. It is planned to gradually extend it to all vessels in this and other reserve fleets.

Magnesium anodes are suspended by wire rope over the side of the ship forming a primary cell with the fleet water as electrolyte and the hull of the vessel as the cathode. This makes a potential of about .76 volt, which is higher than that normally existing between the elements in the hull plates.

Inert electrodes were also tried but these require the use of an impressed external potential, and the sacrifice of the magnesium was found to be more economical than the provision and maintenance of power equipment.

About 1,000 pounds of magnesium is consumed per vessel per year.

—Bede Ernsdorff

●

SPOKANE NEWS

In a suit decided January 16 between Mr. Mark Weaver, plaintiff, and Mr. Jack Casey, defendant, the defense successfully avoided collection of a note held by Weaver by showing that Weaver had misrepresented that he owned the competitor "Dubl-Power."

●

BOOK REVIEWS

Don't miss Dr. Walter J. Murphy's review of **"The Hell Bomb,"** by W. L. Laurence (CEN 29, 603, Feb. 12, 1951). All of us are indebted to Dr. Murphy for the improvements he has made and is continuing to make in **Chemical and Engineering News.**

●

A. C. S. MEMBERSHIP

Of all sections west of the Rocky Mountains, the Puget Sound Section had the largest numerical increase and the largest percentage increase in membership during 1950. Percentage increases were as follows: Central North Carolina, 37.5%; Texas A. & M., 20.4%; Upper Ohio Valley, 19.7%; Western Vermont, 18.6%; Puget Sound, 17.3%. Six of the 11 sections having a membership of more than 1,000 lost ground.—(CEN 29, 586, Feb. 12, 1951.)

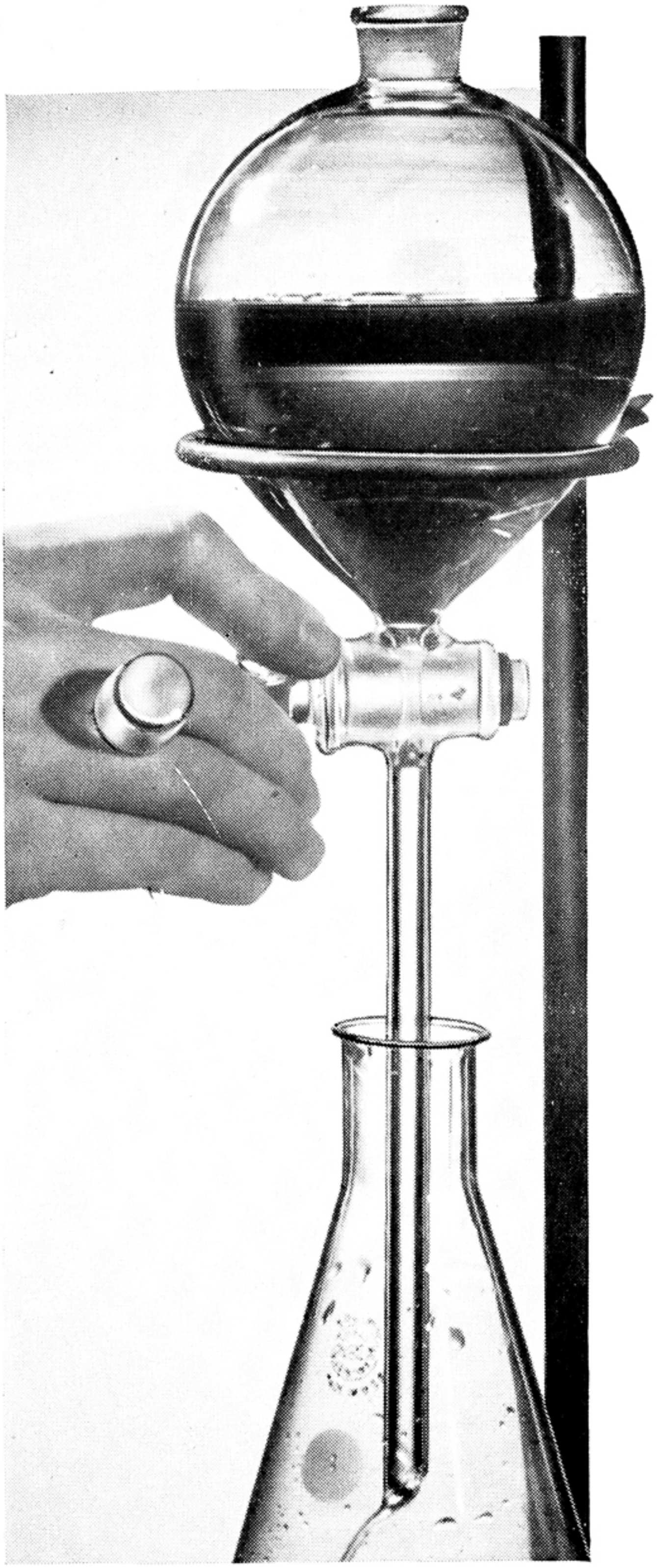
THE SCIENTISTS

(Excerpts of paper prepared by the Staff of **FORTUNE Magazine.** Copyrighted. Reprinted by express permission of **Time, Inc.**)

Three points may be made at once about science as a profession. It is the youngest. It is in the midst of further enormous growth. And, flowing from these and from the state of the world, it is in a crisis that more deeply reflects the crisis of modern times than any other preoccupation of man.

Reasons are not far to find. The scientist is, perhaps, the most characteristic figure of the age. Certainly his is the profession that, viewed in its total impact on society, most sharply differentiates the present from ages past. While all the other learned professions stretch back into antiquity, the scientist as pure scientist is barely three centuries old. He began to appear in numbers and as a distinct class only in the last century. Yet few will deny that this infant has more visibly and violently changed the temporal world than anything that has gone before. And the rate of change is now both accumulative and accelerating. Less than three years after the atom bomb, one noted physicist, Dr. E. U. Condon by name, had the courage or temerity to begin an essay on science and national policy with the blunt statement: "Society is at this moment at the threshold of an undreamed-of mastery of our material environment, for science, which provides that mastery, is in its Golden Age."

Paradoxically, it is exactly this challenging fact that to scientists is the heart of the crisis. Though we may be at such a threshold, there is no assurance that we shall cross over. Two destructive world wars, and a third looming, have seen to that. To Dr. Condon and to many of his colleagues the present is a race between knowledge and ignorance, a test as to whether we shall have the courage to press forward in our own best tra-



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ditions or retrogress into some form of tyranny. A sense of crisis underlies much of the profession. This crisis may be divided into two parts. The first is more or less physical, having to do with problems of manpower, money, and national policy. The second is a physical crisis of intellect, of moral, of faith, of freedom, a crisis that is shared with all thinking men in present-day society.

No one can expect to get rich in the science. Indeed, even on present industrial levels, a top-grade scientist cannot hope to earn as much as a medical man, a lawyer, or even an engineer of the same level of competence. The industrial scientist who earns as much as $50,000 a year is not only the exception but is generally no longer a working scientist, earning his money more for administrative ability than for scientific attainment. As for the academic man, he must find his rewards in other than legal tender. Not even the touted security of academic life is what it used to be, for few except the big universities have anything resembling the pension or annuity plans that have become common in industry. "The academic research man," says one top-rank but elderly scientist bitterly, "must live on a plumber's wage, knowing all the while that his old age is unprotected."

What Makes a Scientist?

What then, if not money, makes a scientist? Before the war some two-thirds of the top 1 per cent of undergraduates — the brilliant men who might turn their minds with distinction to anything — were going into the physical sciences, leaving one-third to spread over all the rest of the professions. And of seventy-one brainy young graduates picked to join Harvard's Society of Fellows in the past fifteen years, half were in the sciences. Moreover, despite economic pressures, a percentage of young men are turning down more lucrative jobs to continue advance research and teaching. The physicist who developed the wartime ground-approach system for aircraft spurned an offer of three times his present salary to work in the University of California's famed Radiation Laboratory, and his is by no means an isolated case.

One explanation is that science is one of the true vocations — a calling — and the best scientists become scientists because they cannot help themselves. By far the leading motive is the freedom offered by the sciences for the constructive exercise of the mind upon the material world, a motive that received first mention by 53 per cent of scientists surveyed for the Steelman report. Science is probably the only profession that not only encourages radical thought, in the sense of an experimental search for new principles below the surface of the accepted, but reserves its highest honors for radical ideas. Nearly 50 per cent of all scientists surveyed, regardless of where employed, picked university work as ideal because of its greater freedom.

To fill in some of the vital statistics and find out what manner of men modern scientists are, **Fortune** questioned some 4,000 members of the top scientific societies. The salient facts tally with same general observations within the profession.

Three major group patterns emerge, again with the inevitable exceptions. Physicist-mathematicians occupy the top cultural group. They generally come from middle-class and professional families, read voraciously and widely very early, grow up in an intellectual climate in which abstract ideas are not foreign, show a marked taste for classical music, and tend to be the most roundly literate and politically conscious, leaning toward the radical. A large number of physicists listed in **American Men of Science** are clergymen's sons.

Chemists occupy the middle ground, generally come from small towns and petit bourgeois parents, who, while they do not read much themselves,

urge their children to. Chemists are more "practical," more concerned with getting ahead, better organizers, less imaginative and politically conscious than physicist-mathematicians, and lean to the conservative. Many were originally lured into the science by two books — **The Romance of Modern Chemistry** and Stokley's **Science Remakes Our World** — which for years were about the only scientific books available in small-town libraries.

The broadest generalization that may be made is that scientists tend to come from the lower-income levels. This is born out in part by the fact that the greatest source of Ph.D's in science is the smaller colleges and universities, many quite unknown outside their own regions. Reed College in Portland, Oregon, for instance, has the astonishing record of having about one in every twenty-six male graduates go on to take Ph.D's in physics.

(To be concluded in April issue)

WESTERN ALUMNI

HAROLD C. UREY

Now 57 years old, Professor Urey, Distinguished Service Professor in the Institute for Nuclear Studies, University of Chicago, received his early training at Montana University and the University of California.

One of his greatest contributions, for which he received the Nobel Prize in Chemistry, was his discovery of deuterium in 1932. In 1939 he lectured to a graduate class on the military potentialities of uranium. Professor Urey was among the first to interest the Army and Navy in the development of atomic weapons and much of the early work was done under his direction at Columbia.

Dr. Urey does not believe in the idea of inevitable progress nor does he think science can solve all problems. In 1938 he served as chairman of The North American Committee to Aid Spanish Democracy, an organization since labeled as subversive by Attorney-General McGrath. He believed that the Spanish Loyalists were not quite as dark a shade of gray as Franco, and he still believes that Franco is not a reliable world citizen. Dr. Urey's recent contributions deal with subjects such as the temperature conditions that obtained when various rocks were formed; and speculations as to the origin of the earth and the possible existence on other planets of forms of life higher than man in the evolutionary scale.—(By G. L. Putnam.)

★

CHEMISTRY

Said a chemist, while seeking a datum
To reveal the insides of an atom,
"For the damn little jigger
To be a lot bigger
Would be a great desideratum."

—(Courtesy of Dr. J. H. Hildebrand)

●

It is always easier to believe than to deny. Our minds are naturally affirmative.—John Burroughs.

CHEMISTS COMMENTS

(We reprint below some original comments by our friend, Dean Joel H. Hildebrand, taken from his classic text, "The Low-Down on Higher Education," James Ladd Delkin, Stanford Press (1948). Unfortunately, we cannot reproduce the illustrations, which add so much to the value of the treatise.)

●

VOCATIONAL GUIDANCE

I asked an old man of Bankok,
Who sat sunning himself on a rock,
    What he planned for the future;
    He replied, "If it suits yer,
I'll make my decisions ad hoc."

★

MATHEMATICS

There once was an old prof mathematical,
Who dreamt he was under a radical.
    But his memory was mute
    On extracting a root,
So he stayed there and took his sabbatical.

★

MATHEMATICS

A bibulous man from Oswego
Would seldom walk straight, the way we go.
    Right and left he would swerve
    In a harmonic curve,
Which expressed, he insisted, his ego.

●

WALLED IN

In the small hours of the morning a policeman came upon a tipsy fellow citizen who was feeling his way round and round a big and bulgy lamppost. At length, in abject despair, the tipsy one came to a halt. "'S no good," he said. "All walled in."—A. A. U. P. **Bulletin,** 36, 754, Winter, 1950.

REGIONAL EMPLOYMENT

Prof. R. W. Moulton and
Prof. Rex Robinson
University of Washington
MElrose 0630

The Puget Sound Chemist will carry notices of positions vacant and wanted. This service is confidential, and available gratis to all employers and members of the American Chemical Society in this area. Rates for A.C.S. members not in the area $3.50 per issue for 50 words or less. Non-members, $7.50.

◆ ◆

Further information regarding the positions given below may be obtained from M. D. Wood, National Personnel Service, Suite 717, 1331 Third Avenue, Seattle 1. Phone SEneca 3438.

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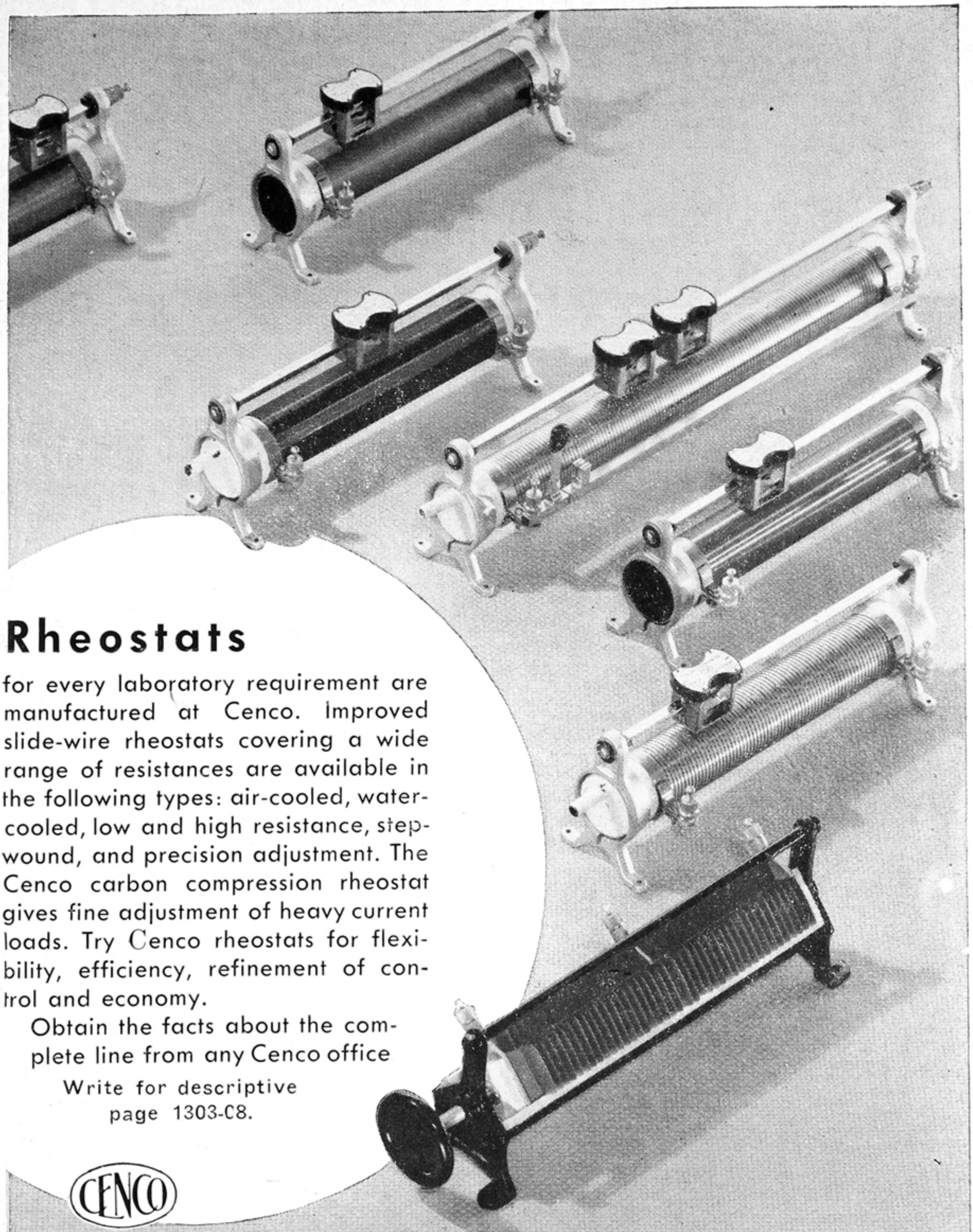

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