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Chemical Abstracts After 75 Years

Members of the American Chemical Society have abundant reasons to be proud of the way their organization has served information needs of its members and of others. They have particular reason to be grateful for the efforts and achievements of many fellow chemists on behalf of *Chemical Abstracts*. This publication, now 75 years old, is regarded in many countries as the world's most valuable vehicle for abstracts of scientific papers.

Chemical Abstracts Service operates with a broad charter. It takes as its domain fields of possible interest to chemists. These include such conventional disciplinary areas as organic chemistry. They also include geochemistry, metallurgy, pharmacology, radiation chemistry, toxicology, and much of biology and physics. Some 12,000 journals are covered entirely or in part. They represent more than 150 countries and 55 different languages. Patents issued in 26 countries and by two international bodies, proceedings, dissertations, reports, and books are also monitored for items of chemical interest. In consequence, about 500,000 items are abstracted, indexed, or cited each year. Abstracts now fill 35,000 pages and indexes total 38,000 pages annually. *Chemical Abstracts* is international in both coverage and audience. Nearly two-thirds of its circulation is abroad.

This coverage of the world's chemical literature began in 1907, at a time when American chemists believed that European abstracting journals were neglecting U.S. contributions. The early issues were edited by William A. Noyes, Sr., from his office at the National Bureau of Standards. He was assisted by two other part-time editors, a secretary, and 129 unpaid volunteer abstractors. The first year's output contained about 12,000 abstracts. Later the editorial office was moved to Columbus, Ohio, adjacent to Ohio State University. With time, the volume of chemical literature grew greatly. For much of its history *Chemical Abstracts* relied heavily on volunteers to monitor and abstract the literature, although indexing was performed by the editorial staff. By the mid-1960's the corps of volunteers had grown to nearly 3300 in 55 nations, but even with this help the organization faced severe financial problems as the cost of composing the material escalated. Fortunately, at this time computer-assisted production became available. To take advantage of this development, most of the abstracting was concentrated in Columbus. The staff of the Royal Society of Chemistry still provide abstracts and indexes of the British chemical literature and about 1000 volunteer abstractors around the world assist with some language and subject areas.

Computer-assisted production of *Chemical Abstracts* opened new opportunities for service to the scientific community. For example, having names of authors, titles, and abstracts in machine-readable form meant that an electronic database was available for on-line search. This potential is being utilized on a large scale. Some of the major vendors report that the *Chemical Abstracts* database is their most popular item.

Organic chemistry is one of the great triumphs of the human intellect. Success in identifying, determining the structures of, and synthesizing about 5 million organic compounds is a marvelous achievement. But the large number of these substances brought with it an enormous problem of nomenclature and access to data about them. Many of the chemicals have been given more than a score of names; one of them (polyethylene) has a thousand. Hundreds of different substances may have the same elemental composition. The only unique characteristic of a compound is its structure. The structures of almost all of the known chemicals are now in a database and may be searched through CAS ONLINE. It is possible to identify within the file substances that share structural features.

With increasing applications and use of its database, Chemical Abstracts Service hopes to obtain about half of its more than \$40 million annual budget from these products by 1984. It is heartening that an activity sponsored by a scientific society has been able to evolve with changing circumstances and to achieve an even greater level of service to the scientific and technical communities.—PHILIP H. ABELSON