

CHEMISTRY-TECHNOLOGY

Code Chemicals for Index

By this method more than a dozen bits of information are put on a simple notched card. Promises to speed research by allowing exploration of related compounds.

► A NEW and simple tool for recording and finding information about simple or complex chemicals and their properties has been developed by Calvin N. Mooers of the Zator Co., Boston, Mass.

Already in use by one large pharmaceutical research laboratory for keeping track of its organic chemistry experimental work, the new application of the Zator method of indexing information promises to speed research by allowing exploration of related compounds that might be overlooked by the usual laborious complicated filing.

The use of complicated chemical names in indexing is abandoned. Simple codes are used for the essential parts of the structural formulae of the chemicals. The new method actually puts more than a dozen pieces of information on a simple notched card. Mechanically sorted according to the random pattern notches, it is easy to pick out any desired combinations of chemical or other properties.

When more widely used, this Chemical Zato coding, as it is called, promises to bring to attention compounds for medical or other use that would otherwise be overlooked. It will now be possible to search for unexpected combinations of chemical structure and properties that research shows are desirable.

Untangling complex patent claims is another application of the new method.

Each factor in the chemical structure is described on the card in a complete and direct fashion. The number of rings is noted. The size of the molecule is specified. The structure is described point by point. The elements are listed according to their place in the compound. If the structural formula is incomplete, the portion so far known is coded. The system for doing this and translating the information into code notches to allow selection is so simple that it can be learned in a half hour. Information other than chemical structure, such as color, physical properties, biological action, patent data or uses can be put on the same card.

"When used in chemical-biological screening," Mr. Mooers explained, "the new finding method should result in accelerating the discovery of useful properties of chemicals. Such screening has in the past resulted in new anti-malarial drugs, ANTU, the rat-killing chemical, and BAL, the antidote for mercury poisoning."

Correlation between the spectrum lines of a compound and its chemical structure should also be facilitated by the Zator method.

A sorter of uncomplicated design is used to select the combinations of information desired. Out of a thousand cards, for instance, it was possible in one use in five minutes to select the ten compounds containing an amine attached to some aliphatic group.

Science News Letter, July 17, 1948

PHYSIOLOGY

Threshold for Sweating Determined by Tests

► WHEN the temperature gets up to 93.9 degrees Fahrenheit, with relative humidity at 50%, a normal person will start sweating even when resting quietly in bed.

This threshold level for sweating, all too familiar these hot days and nights, was determined in scientific measurements reported by Dr. G. E. Burch, of Tulane University School of Medicine and Charity Hospital in New Orleans, in the *Proceed-*

ings of the Society for Experimental Biology and Medicine (April).

With exercise and increased heat production sweating starts at a lower temperature.

With a low relative humidity, the air temperature had to be higher before sweating started in the 11 men, women and teen-age children studied. With relative humidity at 40%, sweating started at 96.8 degrees Fahrenheit. With a relative humidity as low as nine per cent, sweating started at 102.2 degrees Fahrenheit.

In one patient sweating went in cycles. It alternately occurred and stopped at 15-minute intervals, even though conditions in the room remained the same. Apparently sweating cooled the man enough to abolish the need for this natural cooling mechanism for a certain length of time.

"He accumulated heat, sweated again, cooled his body, and then stopped sweating," Dr. Burch explains.

This cyclic sweating conserves water and electrolytes, such as salt, that are lost from the body in sweat.

The studies were made in an air-conditioned room. The rate of water lost from the forearm and the skin over the stomach was measured.

When the studies were prolonged, the people became restless and irritable and "nervous" or "psychogenic" sweating resulted. This made it impossible to observe the sweating due to the temperature.

Science News Letter, July 17, 1948



CHEMICAL ZATOCODING—Simple codes are used for complicated chemical names for indexing purposes which, by means of mechanical sorting according to the random pattern notches, afford an easy method of picking out any desired combinations of chemical or other properties.