

## CHEMISTRY

## Harmless Chemical Proving Effective as Cleansing Agent

**A** NEW and powerful chemical for cleansing purposes is described by Chester L. Baker, industrial chemist of Berkeley, Calif., in a report to the American Chemical Society. The preparation is known to chemists as sodium metasilicate. It is proving especially effective in commercial milk-bottle washing and other operations where a very thorough riddance of grease from glass is necessary.

Unlike soap, the new cleanser calls for no vegetable or animal matter in its manufacture. It is very closely related to water-glass, the sirupy product employed commonly in egg preservation. Like water-glass, it requires only soda and sand as its essential chemical sources.

For many years chemists were unable to crystallize the silicate so as to get a standardized white powder which could be readily dissolved as needed. The new washing agent is the outcome of industrial success in crystallizing metasilicate with five parts of chemically combined water. The result is a granulated solid, handy to use, and with peculiarly effective habits.

### Holds Strength in Reserve

It is claimed that sodium metasilicate has the highest alkalinity of any washing compound save only common lye. Within limits, cleansing ability is measured by intensity of alkaline chemical activity. Unfortunately lye is not only too active for use in washing cloth of any kind, but is so powerful that it will attack even hard glass as well as such metals as aluminum, tin and zinc. The metasilicate, while containing a large percentage of available alkali, holds its main strength in reserve, and releases it in just sufficient intensity to attack the most refractory greases without damage to the article washed. In this performance it seems to excel even the very popular and highly approved trisodium phosphate of commerce.

Sodium metasilicate, according to Mr. Baker, has the power of making common soap yield more abundant suds than soap and water alone would produce. Quantity of suds is regarded as a critical index of efficiency. Furthermore, metasilicate solution has an unusually

high power of wetting glass. This ability permits the pushing aside and elimination of grease. At the same time no poisonous material is involved. A considerable use of the preparation in laundries is anticipated.

Although possessing these valuable qualities in solution, sodium metasilicate must be handled with care in the granular form in which it might be retailed. The sprinkling of the solid granules upon the wet surface of a painted board would cause serious damage to the finish on account of the for-

## INVENTION

## One-Eyed Robot Sorts Cards And Solves Business Problem

**A** ONE-EYED robot that sorts and classifies printed cards may solve a problem that vexes many a big business office. This new electrical and mechanical device is science's latest answer to demands for assistance in classifying bills, checks and other records dealt with in usual office routine.

The robot not only reads cards, but automatically places them in any of the 100 compartments in the machine where they belong. An "electric eye" or photo-electric tube is the operating agency, and it is through this eye that the robot determines the destination of each particular card. But one person is required to attend the robot, which does the work formerly done by scores, and without the errors too often introduced by the "human equation."

Operation of the robot is quite simple. Instead of numbers on the stubs returned from bills sent out by the business concern, a code is used. The attendant feeds into the machine a supply of these stubs or cards, all coded differently. Each card passes under a beam of light, and the reflection from the card, broken by lines of code, reaches the electric eye. The eye, in turn, transmits the signals to the relays and switches which cause a mechanical hand to route the card properly. Read-

ing of the card takes place in a fraction of a second and the robot operates at a high rate of speed.

*Science News Letter, October 10, 1931*

## BOTANY

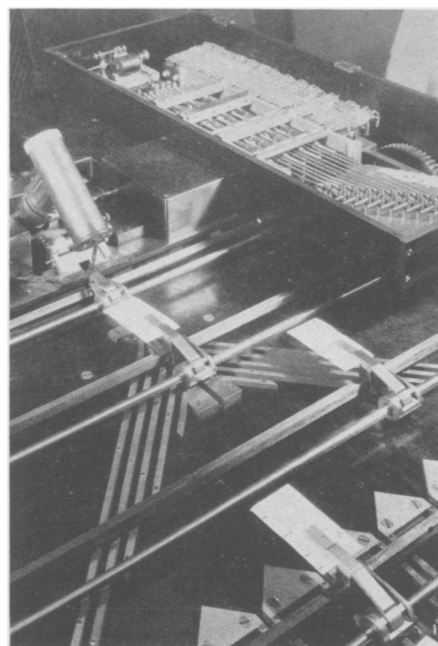
## Colored Flower Juices Used for Acidity Tests

**C**OLORED flower-saps, extracted from the petals of a number of species, are being used to test the degree of acidity or alkalinity of chemical solutions, by Dr. E. P. Smith, a British botanist. Dr. Smith has determined the color-values of a number of saps in the presence of a wide range of acidities and alkalinities. Among the flowers he has used are species of anemone, cineraria, hibiscus, primrose and tulip.

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**THE ROBOT'S EYE**

*Or photo-electric tube, reads the code number on the card and routes it to any one of the hundred compartments of the classifying machine.*