knows the student point of view, owing to the Hanns Sachs-David relationship, which is the essence of the bond between teacher and pupil. In the present Nazi revolution, there have been instances of men of international distinction and renown who have had the doors of their lecture rooms barred by Nazi students. In one instance, at least, the ministry supported the students and not the professor. And this, in the universities of a land where for a century the rights of free teaching and free study have been an example and a lesson to the world. No professor was compelled to teach any one he didn't choose, and no student was forced to listen to any professor he didn't elect. With such an example of ministerial disloyalty, decay of the morale of the universities becomes inevitable.

You are at liberty to use this material in any way you choose, but I must ask you to withhold my name, as my connection with some German colleagues who have talked freely to me of the present situation could be easily traced. And if it were, it might cost them their positions or even more.

The new constitution of the Bavarian universities as described in translation from the Münchener *Neueste Nachrichten,* August 31, is as follows:

Bavaria is the first of the larger Provinces to receive, through Minister of Culture Schlemm, a new university constitution. Primarily, it modifies the status of the rector and the senate, but a new constitution is in preparation for the faculties. However, in many respects, the present decree also affects the faculties.

A double problem was presented for solution. It was essential, at the same time, to incorporate the Bavarian universities into the National Socialistic State as well as to keep this incorporation in harmony with the long existing principle of self-government of the universities. These prerequisites determine the constitution.

The university—hitherto a self-elected corporation administered by parliamentary methods—is now placed under the leadership of a man, the rector, responsible to the National Socialistic State. The rector is appointed by the minister. He is no longer, as formerly, elected by the professors. The senate has, however, the right to make recommendations for this appointment.

The rector appoints his alternate. He may, for the period of his appointment, entrust members of the university with the preparation and settlement of regular university business.

The academic senate which hitherto constitutionally conducted the affairs of the university resigns its authority to the rector and becomes his advisory body. The senators, as well as their alternates, are no longer elected but are appointed by the rector. Among them must be at least one scientific assistant as well as students when student affairs are to be considered.

In the new constitution, the self-government of the university in scientific fields is maintained. Also in the future, as hitherto, will the scientific concerns of the university be administered by the faculties in faculty meetings under the supervision of the state. But the following new regulations concerning the faculties are contained in the constitution. Deans were formerly elected; in the future they will be appointed by the rector. They are no longer executives of the faculties, but have, in their character of appointees of the rector, the management of the faculties. The deans appoint their alternates and the committees of the faculties. All communications of the faculties to the minister are to be transmitted in writing through the rector. The deans are to inform the rector of all important conclusions of the faculties and of all weighty measures that are brought before them. Against votes of the faculties, the deans may protest. Should a faculty reject the protest of a dean, the rector decides.

These are the principal features of the new university constitution promulgated by Minister Schlemm. In place of the hitherto parliamentary-democratic methods of self-government of the Bavarian universities, there is now substituted the principle of political leadership or management.

A corresponding modification of the constitution for the technical high schools in Munich will also follow.

# SCIENTIFIC APPARATUS AND LABORATORY METHODS

## A SORTING STAGE FOR FORAMINIFERA

IN picking out Foraminifera from an unsorted sample the chief concern is to get specimens of all the species present. This, among other things, involves seeing the specimens on every square centimeter of the sorting dish each time it is filled. To be certain that no section of the dish has been missed, some system of control must be employed; and, after numerous experiments, it became apparent that a modified mechanical stage is the best answer to the problem.

Some time ago I designed and built such a stage for use in our laboratory here at New York University. Since then it has been in constant use and has proved to be very satisfactory. We have found it especially helpful where the quantity of material to be examined has been large.

As may be seen from the figure, this sorting stage consists essentially of a stationary stage base and a traveling rotating stage for carrying the sorting tray. The stage base (A) is fastened rigidly to the microscope by flanges (B) which fit into the grooves designed for the usual glass stage. In the center of this stage base is an elongated rectangular opening (C) running from front to back and acting as a track for a rectangular guide attached to the bottom of the

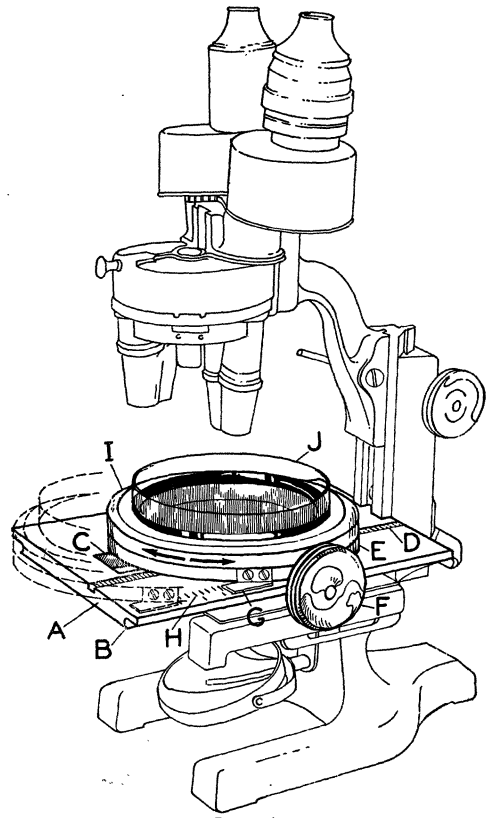


FIG. 1.

traveling element. Parallel to this opening is a slot carrying a rack (D) which meshes with a pinion gear in the bottom of the traveling stage.

This traveling stage (E) is moved back and forth by the adjusting screw (F), the distance being indicated by the pointer (G) and the scale (H). Above the traveling element is the rotating stage (I) which revolves about an axis fixed in the center of the lower disk (E). It bears on its upper surface a circular depression turned to receive a petri dish (J).

To operate the stage one moves the traveling rotating element to a position such that the center of the sorting dish is visible. After examining all specimens in the field of view the stage is moved forward one division on the scale calibrated for the particular magnification used, each division being a little smaller than the width of the field. In the new position the stage is rotated, as picking out progresses, until finally it has been turned through 360°. Then it is again moved forward and again rotated. This process is repeated until the entire sorting dish has been covered.

The front and rear of the stage base are interchangeable so that the adjusting screw may be placed on either the right or the left side of the microscope. Also the stage operates freely when the bottom portion of the microscope stand has been removed. This is a very desirable feature, since most workers prefer the low stand when sorting samples.

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## COLORIMETRIC METHOD FOR DETERMINATION OF $CO_2$ IN GAS MIXTURES[1]

IN a previous publication,[2] a method was described for determination of $CO_2$ in gas mixtures which depends on determining the pH of a standard $NaHCO_3$ solution in equilibrium with the gas mixture. The theory of the method was treated in that paper and will not be discussed in the modification to be described. In the original method, the pH was determined by means of a glass electrode in order to achieve a reasonably high degree of accuracy. In many cases, however, such accuracy is not so desirable as is a rapid, simple, convenient method. Examples might include determination of $CO_2$ in the air of a room, greenhouse, hot-bed or over field crops in which relative values for comparative purposes are desired rather than exact quantitative data. For such cases, a modification of the original method by determining the pH colorimetrically is possible.

The pH determinations were made with Hellige color disks, since these offer several advantages over other colorimetric devices, *e.g.*, permanence of standards, compactness and accuracy of reading. With a little experience, an accuracy of 0.05 pH units is possible with the simple system measured in this method.

It was found that the calibration curve prepared for the original method could not be used for colorimetric determinations. The pH values found for a given $pCO_2$ were 0.1 to 0.3 pH units too low, varying with the indicator. This "systematic error" was constant for a given indicator, hence, if an empirical curve for the indicator used is constructed, the error does not interfere with the application of the method. The data of Higgins and Marriot,[3] who described a colorimetric method similar to this one, likewise show this systematic error, which is probably due to the buffering effects of the indicator and to lack of complete equilibration between solution and atmosphere. It was noticed also that not all indicators were equally satisfactory for the method. Aside from the difference in systematic error, certain indicators did not give accurate readings, except in the middle of the range. The most consistent results were obtained with Brom-thymol-blue for the acid range and Cresol

[1] Frasch Foundation Research in Agricultural Chemistry, Paper No. 69.

[2] P. W. Wilson, F. S. Orcutt and W. H. Peterson, "A Potentiometric Method for the Determination of $CO_2$ in Gas Mixtures," *Ind. Eng. Chem.*, Anal. Ed., 4: 357–361, 1932.

[3] H. L. Higgins and W. M. Marriot, "A Colorimetric Method for Determination of $CO_2$ Percentage in Air," *Jour. Am. Chem. Soc.*, 39: 68–71, 1917.