other arrangement is most convenient at the time. When a hundred or more references are on hand they are given to a typist who makes the copies on the form described and arranges the wording according to a uniform plan. Often the bibliography maker writes a short abstract of the article, or comments on its most useful information, and these statements of from 75 to 125 words are copied on the cards.

The system of filing used by the writer is an attempt to place the cards so they will be most readily found when looking through the index for particular articles or when making a study of a specific subject. The first or original card of each set is placed in a general file arranged alphabetically by authors; the second card (a carbon copy) is placed in its proper alphabetical order according to the type of rock or mineral or texture described; the third card (second carbon copy) is placed in a miscellaneous group, arranged alphabetically, under such headings as "chemical analyses," "environments of deposition" (with subdivisions as lakes, rivers, marine, littoral, swamp, etc.), "laboratory methods," "mineral analyses" and many others. Oftentimes the third card is placed under a separate subheading of the division which contains the second card. For instance, the cards covering the article by Takahashi, on the "Significance of Micro-crystals of Carbonates in Bituminous Shales," would be distributed (1) in "T" of authors' file, (2) in "shales" of the rock division of the file and (3) in "carbonates" in the same division. Another article, by Kindle, "A Comparative Study of Different Types of Thermal Stratification in Lakes and their Influence on the Formation of Marl," would be found by looking in the author index or under "marl" of the rock division or under "lakes" of the environment of deposition class of the miscellaneous division. Often the word used for filing purposes, or the method of classification does not appear in the title of the article but will be given in the abstract of the article at the bottom of the card. When such is the case, it has been found convenient to underline the word or clew to classification with red pencil. Cards for the article by Ross on "Altered Paleozoic Volcanic Materials and their Recognition" would be found in the author index, one under volcanic rocks and the third one in the mineral analyses class, this being an important feature of the article.

The writer recognizes that the brief description does not show clearly how every type of reference would be filed, or that the method is entirely foolproof, but he knows from experience that he can usually find a bibliographical reference in a short time, if it is in the file, without the delay of going through an authors' index.

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TEST PAPERS FOR DETECTING MAGNESIUM

A CONVENIENT method for carrying out the new organic test for magnesium is by means of a spot reaction on filter paper impregnated with the reagent. The test papers may be prepared as follows. White filter paper is immersed in a 0.01 per cent. solution of para-nitrobenzene-azo-resorcinol[1] (ortho, para-dihydroxy-azo-para-nitrobenzene) in alcohol and hung up to dry. When dry cut into pieces of about four square inches and preserve in amber bottles. To perform the test, one drop of the slightly acid solution to be tested is placed in the center of the test paper and allowed to dry. Immerse paper in a dilute sodium hydroxide solution (about 1 per cent.). In the presence of magnesium a blue spot will show in a reddish field. If the test drop contained a large amount of acid the spot will first be yellow. The reaction as performed is sensitive to about 0.005 milligrams of magnesium (one drop of a solution containing 0.1 milligram of magnesium per cc). The limitations on this procedure are the same as those noted before,[2] nickel and cobalt giving similar colored spots and large amounts of ammonium salts and organic matter reducing the sensitivity.

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SPECIAL ARTICLES

LIVING MICRO-ORGANISMS IN THE AIR OF THE ARID SOUTHWEST

NUMEROUS living micro-organisms are present at times in the air in southern Arizona. Recently the writer exposed from aeroplanes sterile agar plates and spore traps during flights primarily intended to afford information concerning the movement of the spores of wheat rusts. Two agars were used: Nutrient, pH 7.2, and potato, pH 6.8. Exposures were uniformly two minutes in length. Some of the results are given in the following table.

No spores of wheat rust were found, but further trials may discover them. Among the fungi were species of Aspergillus and Penicillium, Macrosporium, Alternaria, Cladosporium and one yeast. White and

[1] Purchasable from Eastman Kodak Company, Rochester, New York, or may be prepared by detailed method given by Stone, *Chem.-Analyst*, 19: 6, May, 1930.

[2] Riugh, *J. A. C. S.*, 51: 1456, 1929; Engel, *ibid.*, 52: 1812, 1930.