slow as they choose. Through the efforts of M. L. Jackson and S. W. Bailey an arrangement has now been completed with Pergamon Press to publish a bi-monthly periodical, *Clays and Clay Minerals*, beginning in 1968 with the papers from the Denver Conference. Manuscripts not presented at the annual conferences will also be published.

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Preparation of sodium-degraded mica*

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INTEREST in the processes and products of mica weathering and in the exchangeability of interlayer cations in micaceous minerals with high layer charge has created a need for K-depleted (degraded) mica samples. To prepare these degraded samples, mica particles are often leached or equilibrated with salt solutions, but the extraction of K is slow and generally limited to a small part of the total K. With dioctahedral micas, these methods are particularly ineffective. On the other hand, an exchange of Na for most of the K in micas can be achieved rather easily by placing the mica particles in NaCl-NaTPB solutions (Scott and Smith, 1966). However, this NaTPB treatment produces a mixture of Na-degraded mica and KTPB precipitate that has limited use in degraded-mica investigations. Thus, the utility of the NaTPB method of preparing Na-degraded mica depends upon the success with which the degraded mica can be separated from the KTPB.

Since KTPB is soluble in acetone, KTPB in a mica-KTPB mixture can be removed by adding acetone, filtering and washing the mica with increments of salt-acetone-water solutions. If the KTPB is dissolved with a NaCl solution, some of the K may be readsorbed by the degraded mica. Even so, this method yields mica samples that can be used for layer charge determinations (Scott and Smith, 1966). On the other hand, the re-adsorption of K can be blocked by adding NH_4 with the acetone (Reed and Scott, 1966). This procedure insures a quantitative separation of the replaced K but the degraded mica is then saturated with a combination of Na and NH_4 ions. Thus, to use this approach in the preparation of Na-degraded mica, the NH_4 must now be removed. The possibility of doing so, despite the fact that NH_4 ions are fixed by degraded micas, is considered in this paper.

Large samples of $<50\,\mu$ biotite and muscovite were K-depleted with a 2 N NaCl-0·2 N NaTPB-0·01 M EDTA solution. Details regarding these mica samples and the exchange of Na for K attained with similar NaTPB treatments have been reported earlier (Scott and Smith, 1966). The NaTPB treatment was terminated by adding enough NH_4Cl to make the solution 0·5 N in respect to NH_4 and the KTPB was removed by adding an equal volume of acetone, filtering and washing the mica with a 0·5 N NH_4Cl-60 per cent acetone-water solution. The resultant samples of degraded mica (referred to as NH_4-degraded mica despite the presence of

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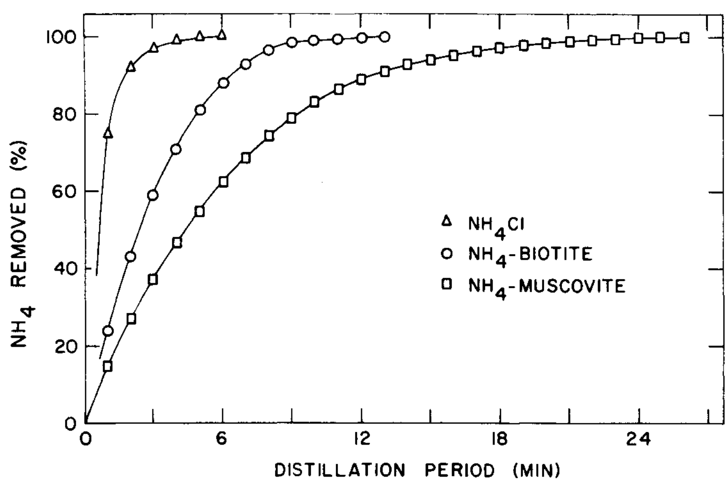

Fig. 1. Removal of NH_4 in degraded biotite and muscovite particles by steam distillation.

adsorbed Na) were freed of NH_4Cl by washing with acetone-water solutions, air-dried and subjected to various treatments for the removal of NH_4. The results obtained by steam distillation are reported here to show that NH_4 in degraded micas can be replaced by Na with no apparent destructive effects on the mineral.

The data in Fig. 1 show the rate and extent of NH_4 removal attained in steam-distillation experiments with the NH_4-degraded samples of biotite and muscovite. To minimize the possibility of mineral destruction, these steam-distillation experiments were carried out at pH 8 with 0·1 g mica in 10 ml of 2 N Na salt solution (0·4 M Na_2HPO_4-0·4 M NaH_2PO_4 solution, with the pH and Na concentration adjusted with NaCl and NaOH additions). Also, the steam rate was adjusted to produce 5 ml distillate/min from a 100 ml reaction flask. Otherwise, the equipment and method was comparable to that described by Bremner and Keeney (1965).

The results obtained with this distillation method and 0·1 m mole NH_4Cl are included in Fig. 1 to show the NH_4 in degraded mica is not removed as rapidly as dissolved NH_4. It is also evident from the mica curves that the micas released their NH_4 at different rates. That is, relative to muscovite, biotite had a higher rate of release with fixed interlayer NH_4, just as it did with indigenous interlayer K (Scott and Smith, 1966). However, complete removal of NH_4 was attained with both micas and in a relatively short time.

The changes in adsorbed cations and layer charge that occurred when the mica particles were subjected to the various treatments required in this method of preparing Na-degraded mica are shown in Table 1. The NH_4-original samples referred to in this table were prepared by leaching portions of the original mica with NH_4Cl. Also, each of these mica samples were washed with acetone-water solutions to remove the soluble salts before they were analyzed.

With the NH_4-saturated samples of original mica as a basis of comparison, it is evident that an exchange of Na for most of the K and all the NH_4 was attained. Furthermore, the Na-degraded mica was prepared with no more change in layer charge than that anticipated for the K depletion step of the process (Scott and Smith, 1966). That is, the steam distillation treatment effected an exchange of Na for NH_4 without a change in layer charge.

The results of these experiments show that it is possible to prepare and isolate Na-saturated samples of highly charged micaceous minerals by this procedure.

Table 1. Adsorbed cations and layer charge of original and degraded $< 50\,\mu$ mica samples

	Total analysis (meq/100 g)			
Mica samples	K	Na	NH_4	Layer charge ($K+Na+NH_4$)
Biotite				
NH_4 – original	196	26·5	2·2	225
NH_4 – degraded	3·1	58·7	115	177
Na – degraded	2·4	175	0·0	177
Muscovite				
NH_4 – original	219	25·5	2·9	247
NH_4 – degraded	7·4	173	68·7	249
Na – degraded	5·7	242	0·0	248

Complete removal of the K in these mica samples was not achieved, but this degree of Na saturation exceeds that obtained by other K-depletion methods. Even with muscovite, all but 5·7 meq K/100 g was replaced by Na. Consequently, this method of preparing Na-degraded mica samples will provide an opportunity of carrying out various mica and interlayer cation exchange experiments that heretofore have been impossible.

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Report of the Nomenclature Committee (1966–67) of The Clay Minerals Society

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THE COMMITTEE, consisting of G. W. Brindley (Chairman,) S. W. Bailey, G. T. Faust, S. A. Forman, and C. I. Rich, recommends the following:

1. *Correct usage of the term "lattice"*

It is recommended that the term "lattice" be used only in a strict, technical sense and in particular that it not