

cases found the residue to produce the interferences in question.

We investigated *Saccharomyces cerevisiae* and *Mucor rouxianus*, two of the many species in which Frey reports these interferences as dominant in the X-ray diagrams of his residues. Our results with these species were negative; neither by X-ray diffraction patterns of residues from extraction, nor by chemical analysis of the ashed fungi, have we been able to detect barium sulphate. For this and other reasons, in particular the occurrence of barium oxide in certain laboratory glasses and its solubility in alkali, it seems possible that Frey's observations on at least the fungi are due to contamination by the chemical treatment*.

Of the few algae investigated by Frey, *Spirogyra* was selected for a check. In this genus E. Nicolai (private communication to R. Frey and D. R. Kregger) has also observed X-ray interferences resembling those of barium sulphate, and she was the first to observe the phenomenon. The interferences were reported to appear in samples of dried natural filaments. Since these interferences cannot be due to contamination, we were interested in investigating this genus.

The X-ray diagrams of our *Spirogyra* samples likewise showed barium sulphate interferences.

We have tried to find if barium sulphate is actually the source of the interference lines. It could be shown both by X-ray diffraction of extracted material and of the ash and by chemical analysis of the latter that this substance is indeed present in the algae. The quantities amounted to 0.2-0.4 per cent of the dry weight. Algae from quite different types of fresh water contained such large amounts.

By examining separate cell walls and cell contents evidence was obtained that the mineral should not be regarded as part of the cell-wall, even though under certain artificial conditions its crystallites may show a preferential orientation with reference to the wall surface.

It may be noted that in higher plants barium is not an unusual minor element¹. In a few species it has been found in amounts comparable to those mentioned above if the soils were rich in exchangeable barium². The barium content of these plants roughly followed that of the soils, and therefore do not seem to be so much a result of accumulation as in *Spirogyra*.

Details of this research will be published elsewhere. The work has been supported by the Netherlands Organization for Pure Research (Z.W.O.).

*Note added in proof. Prof. Frey-Wyssling informs me that micro-analyses of Frey's fungi were made at Zurich after his paper had appeared. Barium could not be detected. This supports the above views concerning its origin in Frey's alkali extracted specimens, as does the fact that I obtained barium sulphate from alkali stored at 60° C. in certain types of Erlenmeyer vessels.

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¹ Frey, R., *Ber. Schweiz. Botan. Ges.*, **60**, 227 (1950).

² Houwink, A. L., and Kregger, D. R., "Antonie van Leeuwenhoek", **19** (1953).

³ Kregger, D. R., *Biochim. Biophys. Acta*, **13**, 1 (1954).

⁴ Robinson, W. O., Whetstone, R. R., and Edgington, G., U.S. Dept. Agric. Tech. Bull. 1013 (1950).

The Treatment of the Mentally Ill

THE otherwise excellent article "The Treatment of the Mentally Ill" in *Nature* of August 10, p. 253, contains one surprising paragraph in which reference is made to "the excessive safeguards against wrong certification (which are now unnecessary)" and "In practice, the average psychiatrist rarely certifies anyone".

These remarks do not agree with the facts of the case, which are that, while the total number of admissions to mental hospitals has increased during recent years, the number of certified patients has not substantially decreased over the past twenty-five years, but remains static in the region of 20,000 annually, with only a slight decrease to 17,500 in 1956.

The writer of the article could not, I think, have read the several Parliamentary debates during the past year in which Mr. Norman Dodds, myself and others—including Dr. A. D. D. Broughton, the only practising psychiatrist in the House—have commented on the hasty and frequently unnecessary use of compulsory certification powers. It must be repeated that a single doctor, who need not be a psychiatrist, can under present law certify a patient after a minimum period of observation.

The Royal Commission only suggested the elimination of present 'safeguards' because they are obviously illusory and ineffective. Its proposals contain alternative safeguards which it is hoped will be more effective in preventing the unsatisfactory use of compulsory powers which are so prominent a feature of the mental illness picture to-day.

The statement that "the scarcity of beds leads to patients being discharged too early rather than to their being unduly detained", which this paragraph also contains, does not correspond with the facts in numerous cases that have come to my notice over the past twelve months.

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EXCESSIVE safeguards against wrong certification exist inasmuch as a magistrate, who is unlikely to be instructed in mental illness, is included in those signing the document. In any event, although some 20,000 people are certified annually, it is very rare for genuine complaints of wrong certification to come to light. Most cases claiming it are in patients suffering from paranoid delusions of persecution. The few cases supported in the courts have been those of border-line mental deficiency (usually after some delinquency).

The average psychiatrist rarely certifies patients. Many patients are certified on what is known as a 'three-day order', which confines them to an observation ward for psychiatric investigation by an experienced medical man. A large number of these are never sent to a mental hospital but discharged.

As regards the question of scarcity of beds, we are informed that it is a matter of daily clinical experience to find that patients are being discharged prematurely. EDITORS.