

LITERATURE CITED

1. M. R. Sharipov et al., *Khim. Prirodn. Soedin.*, 413 (1974).
2. P. Kh. Yuldashev et al., *Khim. Prirodn. Soedin.*, 192 (1966).
3. Herst H. A. Linde, *Helv. Chim. Acta*, 48, 1822 (1965).
4. M. R. Yagudaev, M. V. Malikov, and S. Yu. Yunusov, *Khim. Prirodn. Soedin.*, 493 (1974).
5. M. M. Khalmirzaev, M. V. Malikov, and S. Yu. Yunusov, *Khim. Prirodn. Soedin.*, 806 (1973).
6. J. L. Pousset and J. Poisson, *Comp. Rend.*, 259, 597 (1964).
7. V. M. Malikov, Sh. Z. Kasymov, and S. Yu. Yunusov, *Khim. Prirodn. Soedin.*, 640 (1970).
8. J. E. Saxton, in: *The Alkaloids* (ed. R. H. F. Manske), Vol. 10, Academic Press, New York (1967), p. 521.
9. R. C. Chan, *Phytochem.*, 8, 219 (1969).
10. J. L. Pousset, J. Poisson, R. H. Shine, and M. Shamma, *Bull. Soc. Chim. Fr.*, 2766 (1967).
11. A. H. Beckett, C. M. Lee, E. J. Shellard, and A. N. Tackie, *Tetrahedron Lett.*, 2709 (1963).

ALKALOIDS OF THE ROOTS OF *Paracynoglossum* *imeretinum*

I. V. Man'ko and L. G. Marchenko

UDC 547.944/945

We have previously reported [1] that four alkaloids have been isolated from the epigeal part of *Paracynoglossum imeretinum* (Kuzn.) M. Pop. The composition of the combined alkaloids isolated from the roots has not been studied. We have now investigated the roots of this plant collected in the region of the town of Kobuleti.

A chromatographic comparison of the combined alkaloids of the epigeal part of the roots showed that the qualitative compositions of the alkaloids were identical. After separation by the previous method [1], we succeeded in isolating four individual bases which were identified as heliosupine and echinadine and their N-oxides.

LITERATURE CITED

1. I. V. Man'ko and L. G. Marchenko, *Khim. Prirodn. Soedin.*, 537 (1971).

Leningrad Institute of Pharmaceutical Chemistry. Translated from *Khimiya Prirodnikh Soedinenii*, No. 3, pp. 402-403, May-June, 1976. Original article submitted November 25, 1975.

This material is protected by copyright registered in the name of Plenum Publishing Corporation, 227 West 17th Street, New York, N.Y. 10011. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, microfilming, recording or otherwise, without written permission of the publisher. A copy of this article is available from the publisher for \$7.50.