CORRECTIONS TO A. I. CHEREMISIN'S PAPER "A STRUCTURE THEORY OF Φ-RINGS"

A. I. Cheremisin

1. In my paper [1] an error was made in the definition of an A-ring. First we introduce the following concept.

A Riesz ring R is said to be an ordered ring completely closed with respect to division if for any right O-ideal $H \subseteq R$, left O-ideal $A \subseteq R$, and any g, $h \in R$ the following conditions hold:

$$gh + H > H \,\&\, g + H > H \Rightarrow h + H \geqslant H;$$

$$gh + A > A \,\&\, h + A > A \Rightarrow g + A \geqslant A.$$

The definition of an A-ring on p. 890 in [1] must be replaced by the following definition.

Let a strict ΦC-ring R satisfy the approximation property, and let the sets (M : R), (R : M), (M : g), and (g : M) be directed for any o-ideal $M \subseteq R$ and any $g \in R^+$. Then R is said to be an A-ring if R is an f-ring or an ordered ring completely closed with respect to division.

2. In the proof of Theorem 14 it was asserted without explanation that if $H = \{o\}$, then $M = \{o\}$. This follows from the following reasoning. If R is an f-ring, then this is well known ([2], Chapter II, Corollary 4.7). If R is not an f-ring and $M = \{o\}$ (but $H = \{o\}$), then by using the properties of $G = R_+/M$ and reasoning as in the proof of Theorem 10 in [1], it is easy to show that R is primary and, therefore, is an antilattice ([1], Theorem 1). If $(\bar{o} : \bar{g}) \neq \{o\}$ for any $g \in R^+$, then $H = \bigcap_{g \in R^+} (\bar{o} : \bar{g}) \neq \{o\}$ (by virtue of the subdirect irreducibility of an antilattice; see [3], Theorem 10.1) (contradiction). If $(\bar{o} : \bar{g}) = \{o\}$ for some $g \in R^+$, then $\bar{g} \cdot M = G$ and an $a \in M$ can be found such that $\bar{g}(a - e) > \bar{o}$. Since R^+ is completely closed with respect to division, $a - e > m$, where $m \in M$ and $e \in M$ (contradiction).

3. Misprints. In line 6 from the bottom on p. 879, instead of "o-morphic" it should read "o-monomorphic."

In line 15 from the top of p. 885, instead of "[1]" it should read "[3]."

In line 17 from the bottom on p. 885, instead of the letters "I" it should read the letters "J."

In line 23 from the bottom on p. 886, instead of "$a \in$ IA" it should read "$a \in$ A."

In line 20 from the top on p. 890, instead of "$\bar{A}$" it should read "A."

In line 2 from the top on p. 894, instead of "4.13" it should read "4.12."

In line 17 from the bottom on p. 894, instead of "J(I)(I)" it should read "J(I)I."

In line 4 on p. 895, instead of "N(R) $\in$ J(R)" it should read "N(R) $\subseteq$ J(R)," and instead of the word "theorem" it should read "Theorem 4."

LITERATURE CITED

1. A. I. Cheremisin, "A structure theory of Φ-rings," Sibirsk. Matem. Zh., 11, No. 4, 879-895 (1970).
2. D. G. Johnson, "A structure theory for a class of lattice-ordered rings," Acta. Math., 104, 163-215 (1960).
3. L. Fuchs, "Riesz groups," Ann. Scuola Norm. Super. Pisa, Sci. Fis. c Mat., 19, 1-34 (1965).

Translated from Sibirskii Matematicheskii Zhurnal, Vol. 14, No. 2, pp. 450-451, March-April, 1973.