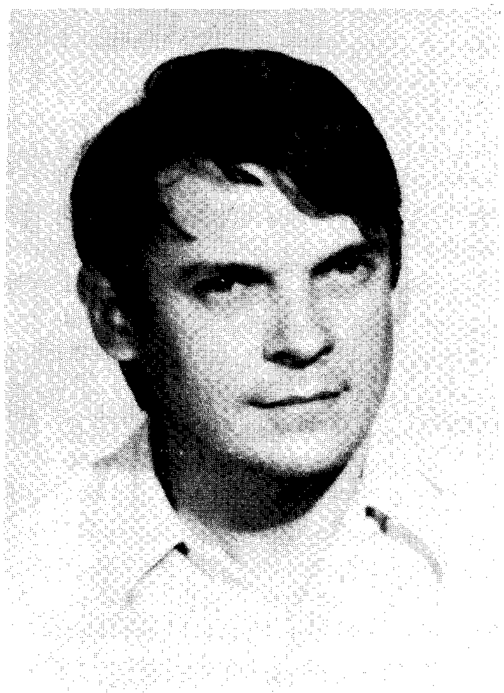
Order **2** (1986), 331–333. 0167-8094/86.15.

A Tribute to András Huhn



András Huhn died suddenly in a tragic accident on 6 June 1985. He was only 38. His passing away is a heavy loss for all lattice theorists and for Hungarian algebraic life.

András Huhn was born in Szeged on 26 January 1947. He pursued university studies in Szeged at the József Attila University from 1966 to 1971. Since 1971 he worked at the Algebra Department of the same university. He became an associate professor in 1977. In 1975 he took the degree 'Candidate of Mathematical Science' at the Hungarian Academy of Sciences.

The creative activity of András started in 1970 with the introduction of *n-distributive lattices*. He wrote several papers on this theme and solved some important problems of B. Jónsson. A lattice L is called *n-distributive* if it is modular and, for arbitrary $x, y_0, y_1, \ldots, y_m$,

$$\mathbf{D}_m : x \wedge \bigvee_i y_i = \left[\bigvee \; x \wedge \bigvee_{i \neq j} y_i\right]$$

holds.

His first result was that n-distributive lattices can be characterized among the modular lattices just as distributive lattices are characterized by forbidden diamonds $\mathbf{M}_3$. He generalized the *diamond* as follows: Let $\mathbf{B}_{n+1}$ denote the Boolean algebra of length $n + 1$, and let w be a further element. Define the meet and join operations in the set $P_n = \mathbf{B}_{n+1} \cup \{w\}$ so that w is a complement of all atoms of $\mathbf{B}_{n+1}$; $\mathbf{B}_{n+1}$ is a $\{0, 1\}$-sublattice of P_n and P_n is a partial lattice. P_n is called the *n-diamond.* A modular lattice is *n-distributive* if it does not contain P_n ([2, 3]) or if it does not contain a sublattice isomorphic to the subspace lattice of an irreducible projective geometry of dimension n. Another result concerning the n-diamond is this. $F_{\mathcal{M}}(P_n)$ denotes the free modular lattice generated by P_n. This lattice is trivially finitely presented over the variety $\mathcal{M}$ of all modular lattices. András proved in [5] that the automorphism group of $F_{\mathcal{M}}(P_n)$ is infinite. This was the first step towards the solution of a problem of G. Grätzer whether the automorphism group of a finitely presented lattice over a variety is always finite.

Among his deep results on n-distributive lattices one of the most important is a joint work with Ch. Herrmann [9]. $\mathbf{N}$ is the class of all lattices of normal subgroups of groups. A lattice is called *normal* if it is in the variety $\mathbf{N}^e$ generated by $\mathbf{N}$. The main theorem of [9] gives a complete list of subdirectly irreducible normal lattices which are generated by an n-diamond ($n \geqslant 3$). In [10] András uses n-distributive lattices to construct lattice varieties which are not generated by their finite members, and lattice varieties which cannot be defined by finitely many identities.

In 1978–79 András spent a fruitful year in Winnipeg with G. Grätzer. During his visit they wrote several joint papers. They proved [14] that every finitely presented lattice has a congruence relation such that the quotient lattice is finite and the congruence classes are embeddable in a free lattice. Very important are their results on amalgamated free products ([15, 19, 20, 28]). The two main problems are: the common refinement property and the properties of free generating sets. In [16] he obtained, with G. Czédli and L. Szabó, some interesting results on compatible orderings of lattices.

In the last years of his life he studied the characterization problem of congruence lattices of lattices. First he found a new proof for my theorem that *the ideal lattice of a distributive lattice is the congruence lattice of a lattice* ([25]). For this proof he gave a very interesting representation theorem for finite distributive lattices ([24]). His last result is the following ([29]):

> *Let F be a countable distributive semilattice. Then its ideal lattice I(F) is the congruence lattice of some lattice.*

(H. Dobbertin found, independently, another proof for this theorem.)

András Huhn was editor of *Algebra Universalis* and *Acta Sci. Math. Szeged.* He was also editor of two Colloquium Proceedings.

He was an outstanding lattice theorist, and also an excellent teacher: some of his pupils are successful research mathematicians.

We will cherish his memory.

Budapest, 19 December 1985 E. TAMÁS SCHMIDT

List of Publications of András Huhn

1. Gyengén disztributív hálók, *Acta Iuvenum Universitatis Szegediensis*, 1970.
2. Schwach distributive Verbände, *Acta Fac. Rer. Nat. Univ. Comenianae (Bratislava)*, Mim. c. 51–56 (1971).
3. Schwach distributive Verbände I, *Acta Sci. Math. (Szeged)* **33** (1972), 297–305.
4. Über einige Fragen der Theorie der primitiven Klassen von Verbänden, *Scripta Sci. Natur. Univ. Purkyniane (Brno)* 4 (1974), 27–29.
5. On G. Grätzer's problem concerning automorphisms of a finitely presented lattice, *Algebra Universalis* 5 (1975), 65–71.
6. Zum Begriff der Charakteristik modularer Verbände, *Math. Z.* **144** (1975), 185–194 (with C. Herrmann).
7. Zum Wortproblem für freie Untermodulverbände, *Archiv der Math.* **26** (1975), 449–453 (with C. Herrmann).
8. Two notes on n-distributive lattices, *Colloquia Math. Soc. J. Bolyai, 14. Lattice Theory, Szeged, 1974*, North-Holland, Amsterdam, 1976, pp. 137–147.
9. Lattices of normal subgroups which are generated by frames, *ibid.* pp. 97–136 (with C. Herrmann).
10. n-distributivity and some questions of the equational theory of lattices, *Colloquia Math. Soc. J. Bolyai, 17. Contributions to Universal Algebra, Szeged, 1975*, North-Holland, Amsterdam, 1977, p. 167–178.
11. Congruence varieties associated with reducts of Abelian group varieties, *Algebra Universalis* 9 (1979), 133–134.
12. On n-distributive systems of elements of modular lattice, *Publicationes Mathematicae* 27 (1980), 107–115.
13. A note on finitely presented lattices, *C. R. Math. Rep. Acad. Sci. Canada* 2 (1980), 291–296 (with G. Grätzer).
14. On the structure of finitely presented lattices, *Canad. J. Math.* **33** (1981), 404–411 (with G. Grätzer and H. Lakser).
15. Amalgamated free product of lattices. I. The common refinement property, *Acta Sci. Math. (Szeged)* **44** (1982), 53–66 (with G. Grätzer).
16. On compatible ordering of lattices, *Colloquia Math. Soc. J. Bolyai, 33. Contributions to Lattice Theory, Szeged, 1980*, North-Holland, Amsterdam, 1982, 87–99 (with G. Czédli and L. Szabó).
17. On some identities valid in modular congruence varieties, *Algebra Universalis* **12** (1981), 322–334 (with R. Freese and C. Herrmann).
18. On disjoint residue classes, *Discrete Math.* **41** (1982), 327–330 (with L. Megyesi).
19. Amalgamated free product of lattices. II. Generating sets, *Studia Sci. Math. Hungar.* **16** (1981), 141–148 (with G. Grätzer).
20. Amalgamated free product of lattices. III. Free generating sets, *Acta Sci. Math. (Szeged)* **47** (1984), 265–275 (with G. Grätzer).
21. On well-orderings which are tight relative to a prescribed distance function, *Studia Sci. Math. Hungar.*, submitted.
22. The Rubik cube and wreath product of groups (in Hungarian).
23. Schwach distributive Verbände II, *Acta Sci. Math. (Szeged)* **46** (1983), 85–98.
24. A reduced free product of distributive lattices I, *Acta Math. Acad. Sci. Hungar.* **42** (1983), 349–354.
25. On the representation of distributive algebraic lattices, *Acta Sci. Math.* **45** (1983), 239–246.
26. On non-modular n-distributive lattices, I. Lattices of convex sets, *Acta Sci. Math.*, to appear.
27. Weakly independent subsets in lattices, *Algebra Universalis* **20** (1985), 194–196 (with. G. Czédli and E. T. Schmidt).
28. Amalgamated free product of lattices IV (with G. Grätzer).
29. On the representation of distributive algebraic lattices II.
30. Non-modular n-distributive lattices and the Carathéodory theorem for convex sets.
31. On non-modular n-distributive lattices: The decision problem for identities in finite n-distributive lattices, *Acta Sci. Math.* **48** (1985), 215–219.