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EUROPEAN MEETING OF THE ASSOCIATION FOR SYMBOLIC LOGIC

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Logic Colloquium '76 took place at the Mathematical Institute, University of Oxford, from the 19th to 30th of July 1976. The meeting was sponsored by the Association as the European Summer Meeting of the ASL and by the British Logic Colloquium, The International Union of History and Philosophy of Science, and the North-Holland Publishing Company. A special one-day Symposium in honour of the 25th anniversary of the North-Holland series ***Studies in Logic*** was held on the 27th of July, which also included a memorial tribute to the late A. Mostowski. Mr. M. D. Frank, ex-president of North-Holland, opened the Symposium. Additional financial support for the colloquium was gratefully received from the Bertrand Russell Memorial Logic Conference, the Royal Society, the British Academy, the British Council, and the London Mathematical Society. In order to balance the budget it was also necessary to charge a conference fee. There were more than 300 participants from 28 countries and all continents. There were 79 contributed papers, 10 of which were presented by title. Abstracts of the contributed papers are printed here, but those of the invited speakers are not included; it is hoped that the proceedings of the conference will be published by North-Holland in the near future. A list of the 35 invited speakers and titles is given below; the contributions of Professors Barwise, Keisler, Kreisel, Marek and Rasiowa constituted the North-Holland Symposium.

S. Aanderaa, *Horn formulas and the* $P = NP$ *problem.*
J. Barwise, *The completeness theorem for stationary logic.*
J. Berg, *Bolzano's contribution to logic and philosophy of mathematics.*
P. Eklof, *The splitting of abelian groups.*
Y. Ershov, *The model* $\mathbb{C}$ *of the partial continuous functionals.*
S. Feferman, *Schemata and recursively continuous functionals.*
J. Fenstad, *Developments in generalized recursion theory.*
U. Felgner, *Stability and* $\aleph_0$*-categoricity of nonabelian groups.*
R. Gandy, *The theory of types.*
J-Y. Girard, *A new approach to ordinal notations.*
L. Harrington, *Analytic determinacy and* 0^*.
J. van Heijenoort, *Set-theoretic semantics.*
M. Hyland, *Constructivity in mathematics.*
T. Jech, *Precipitous ideals.*
H. Keisler, *The future of model theory in applied mathematics.*
P. Krauss, *Relatively homogenous structures.*
G. Kreisel, *On the kind of data needed for a theory of proofs.*
A. Macintyre, *Totally categorical groups and rings.*
W. Marek, *A survey of the work of A. Mostowski and his school.*
A. Mathias, *Chang's conjecture.*
A. Meyer, *The fundamental theorem of complexity theory.*
D. Pincus, *Adding dependent choice to the prime ideal theorem.*
M. Rabin, *Complexity of decision problems in logic.*
H. Rasiowa, *A tribute to A. Mostowski.*
R. Rucker, *The one/many problem in the foundations of set theory.*
G. Sabbagh, *On the elementary equivalence of polynomial rings and formal power-series rings.*
C. Schnorr, *Network complexity and machine complexity.*
S. Shelah, *Jónsson groups.*

(iii) $\mathfrak{A}$ *is isomorphic to a subdirect product of models of* K^*, *each of which is subdirectly irreducible in the class of all models of* K^*.

DINO BUZZETTI, *On J. S. Mill's theory of connotation.*

The chief aim of this paper — which is to be part of a major work on Mill — is to provide grounds for the following claims concerning Mill's theory of connotation: (i) it is a positive contribution to the development of (philosophical) logic; (ii) it is strictly connected with conceiving a theory of scientific explanation. Firstly, I follow up the origins of the theory, deriving from the need of solving a central problem in the theory of scientific explanation: how can we obtain knowledge of new facts (synthetic truths) by means of syllogistic deduction? The solution to this problem, which will be attempted by Mill by the theory of real inference, requires a new theory of meaning for general terms, i.e. the theory of connotation. In the second place, I deal with Mill's general attitude to the problem of meaning and the analysis of language. It results clearly that he rejects the traditional conceptualistic approach, aiming instead at a semantic theory in purely linguistic terms; furthermore, his analysis refers to an ideal language rather than to ordinary language. Finally, Mill's theory of connotation (considered as sketching out a semantic theory of terms for an ideal language) is vindicated against some of its critics (H. W. B. Joseph, L. S. Stebbing, J. Cook Wilson, P. T. Geach), taking into consideration and developing the interpretations proposed by J. N. Keynes and A. N. Prior. From this point of view, the singular terms can be considered as proper names devoid of 'sense', and the general terms as propositional functions. This analysis of the meaning of general terms allows Mill to consider the general propositions, which serve the purpose of expressing general empirical laws, as formal implications and to explain their role in the theory of scientific explanation. The paper concludes by stressing the necessity for further inquiry into the ideological grounds which moved Mill to an analysis of scientific explanation, hence to his proposing a new theory of meaning for general terms, which proved to be of considerable relevance for the development of (philosophical) logic.

DOUGLAS CENZER, *A Faithful Extension Principle.*

Suppose that we are given an analytic (Σ_1^1) subset A of the plane such that every section of A satisfies certain property P. A general problem suggests itself: Is there a Borel (Δ_1^1) extension B of A every section of which still satisfies P?

Our Faithful Extension Principle answers this in the affirmative provided that P is a Π_1^1 and monotone property ($P(X)$ and $Y \subseteq X$ implies $P(Y)$). Examples of such properties are: finiteness, being scattered, and being nowhere dense.

These results are obtained by considering the complement of A as an effective union of Borel sets and working with boundedness — the author's work in *Monotone inductive definitions over the continuum*, this JOURNAL, vol. 41 (1976), pp. 188–198 provides the necessary tools.

GREGORY L. CHERLIN, *$\aleph_0$-categorical abelian-by-finite groups.*

G is "abelian by finite" iff G has a normal abelian subgroup A of finite index, i.e. there is a short exact sequence:

$$(\S) \qquad 0 \to A \to G \to F \to 1$$

with A abelian and F finite. Then F acts on A "by conjugation" and so A is an F-module ($= Z[F]$-module).

THEOREM I. *G is an $\aleph_0$-categorical group iff A is an $\aleph_0$-categorical F-module.*

For the next theorem assume G has finite exponent, write

$$A = \prod A_p$$

as a product of p-torsion subgroups, and let S_p be a p-Sylow subgroup of F for each p.

THEOREM II. *A is an $\aleph_0$-categorical F-module iff for each p, A_p is an $\aleph_0$-categorical S_p-module.*

REFERENCE

[1] W. BAUR, *On $\aleph_0$-categorical modules*, this JOURNAL, vol. 40 (1975), pp. 213–220.