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REVIEWS

The Association for Symbolic Logic publishes analytical reviews of selected books and articles in the field of symbolic logic. The reviews were published in ***The Journal of Symbolic Logic*** from the founding of the JOURNAL in 1936 until the end of 1999. The Association moved the reviews to this BULLETIN, beginning in 2000.

The Reviews Section is edited by Steve Awodey (Managing Editor), John Baldwin, John Burgess, Mark Colyvan, Anuj Dawar, Marcelo Fiore, Noam Greenberg, Hannes Leitgeb, Ernest Schimmerling, Carsten Schürmann, Kai Wehmeier, and Matthias Wille. Authors and publishers are requested to send, for review, copies of books to *ASL, Box 742, Vassar College, 124 Raymond Avenue, Poughkeepsie, NY 12604, USA.*

In a review, a reference "JSL XLIII 148," for example, refers either to the publication reviewed on page 148 of volume 43 of the JOURNAL, or to the review itself (which contains full bibliographical information for the reviewed publication). Analogously, a reference "BSL VII 376" refers to the review beginning on page 376 in volume 7 of this BULLETIN, or to the publication there reviewed. "JSL LV 347" refers to one of the reviews or one of the publications reviewed or listed on page 347 of volume 55 of the JOURNAL, with reliance on the context to show which one is meant. The reference "JSL LIII 318(3)" is to the third item on page 318 of volume 53 of the JOURNAL, that is, to van Heijenoort's *Frege and vagueness*, and "JSL LX 684(8)" refers to the eighth item on page 684 of volume 60 of the JOURNAL, that is, to Tarski's *Truth and proof*.

References such as 49***5*** or 280***1*** are to entries so numbered in *A bibliography of symbolic logic* (the JOURNAL, vol. 1, pp. 121–218).

GREG HJORTH. ***Classification and orbit equivalence relations.*** Mathematical Surveys and Monographs, vol. 75. American Mathematical Society, Providence, RI, 2000, xviii + 195 pp.

GREG HJORTH. *A dichotomy theorem for turbulence*. ***The Journal of Symbolic Logic***, vol. 67 no. 4 (2002), pp. 1520–1540.

We shall be considering the topic of Borel reducibility of $\mathbf{\Sigma}^1_1$ equivalence relations and some closely related topics. It is difficult to describe exactly how this part of mathematics fits into the whole of mathematics. It is a subfield of descriptive set theory, which, in turn, is a subfield of mathematical logic. But it is not only that; it is also a subfield of several other branches of mathematics. Much recent research has, in fact, been done by non-logicians, or by logicians who are not generally thought of as descriptive set theorists. And the mathematics is as diverse as the people.

About fifteen years ago, Greg Hjorth began proving theorems on this topic. He apparently can't stop, and now has over thirty publications. The work under review is only a small fraction of his research.

For E and F equivalence relations on Polish spaces X and Y, respectively, we say that E is *Borel reducible* to F if there is a Borel function $\theta\colon X \to Y$ so that for all $x_1, x_2 \in X$: $x_1 E x_2$ iff $\theta(x_1) F \theta(x_2)$. One can consider this topic from two points of view—the set theoretic point of view or the classification point of view. The former point of view is that this is "Borel cardinality": if we modify the definition by allowing θ to be an arbitrary function, then the

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