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Edited by

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Professor Sigekatu Kuroda, one of the founders of the Nagoya Mathematical Journal, died on November 3, 1972. Professor Kuroda was associated with Nagoya University from 1942 to 1963, and during the 1953–54 academic year was Dean of the Faculty of Science. In 1962, he moved from Nagoya to the University of Maryland, where he was Professor of Mathematics. At the time of his death, Professor Kuroda held the positions of Professor Emeritus at both Nagoya University and the University of Maryland. Dr. Kuroda was an editor of the Nagoya Mathematical Journal and the Journal of Number Theory. He published extensively in the fields of number theory and logic and guided many students to their Ph.D. degrees. In addition, he devoted his energies to the development of the Mathematics Departments of Nagoya and Maryland.

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- [1] Zur Algebra der Logik, Proceedings of the Imperial Academy, Tokyo, vol. 6, pp. 220–223, 1930.
- [2] Zur Algebra der Logik II, Proceedings of the Imperial Academy, Tokyo, vol. 6, pp. 299–302, 1930.
- [3] Zur Algebra der Logik III, Proceedings of the Imperial Academy, Tokyo, vol. 7, pp. 33–36, 1931.
- [4] Über die Approximation quadratischer irrationalzahlen durch rationale, Proceedings of the Imperial Academy, Tokyo, vol. 12, pp. 325–328, 1936.
- [5] Über den Dirichletschen Körper, Journal of the Faculty of Science, Imperial University of Tokyo, Section I, vol. 4, pp. 383–406, 1943.
- [6] Über die Pellsche Gleichung, Proceedings of the Imperial Academy, Tokyo, vol. 19, pp. 611–612, 1943.
- [7] Über die Klassenzahlen algebraischer Zahlkörper, Nagoya Mathematical Journal, vol. 1, pp. 1–10, 1950.
- [8] Intuitionistische Untersuchungen der formalistischen Logik, Nagoya Mathematical Journal, vol. 2, pp. 35–37, 1951.
- [9] Über die Zerlegung rationaler Primzahlen in gewissen nicht-abelschen Zahlkörpern, Journal of the Mathematical Society of Japan, vol. 3, pp. 148–156, 1951.
- [10] On the intuitionistic and formalistic theory of real numbers, Proceedings of the International Congress of Mathematicians 1954, vol. 1, pp. 538–539, 1954.
- [11] An investigation on the logical structure of mathematics,
 - I. A logical system, Abhandlungen aus dem mathematischen Seminar der Universität Hamburg, vol. 22, pp. 242–266.
 - II. Transformation of proof, Abhandlungen aus dem mathematischen Seminar der Universität Hamburg, vol. 23, pp. 201–227, 1959.

- III. Fundamental deductions, Nagoya Mathematical Journal, vol. **13**, pp. 21–52, 1958.
- IV. Compendium for deductions, Nagoya Mathematical Journal, vol. **13**, pp. 123–133, 1958.
- V. Contradictions of Russel's type, Journal of Symbolic Logic, vol. **23**, pp. 393–407, 1958.
- VI. Consistent V-system, Nagoya Mathematical Journal, vol. **14**, pp. 95–107, 1959.
- VII. Set-theoretical contradictions, Nagoya Mathematical Journal, vol. **14**, pp. 109–127, 1959.
- VIII. Consistency of the natural number theory $T_1(N)$, Nagoya Mathematical Journal, vol. **14**, pp. 129–158, 1959.
- IX. Deductions in the natural number theory $T_1(N)$, Osaka Mathematical Journal, vol. **11**, pp. 7–42, 1959.
- X. Concepts and sets, Osaka Math. J., vol. **11**, pp. 213–248, 1959.
- XI. Not yet published.
- XII. The principle of extensionality and of choice, Proc. Japan Academy, vol. **34**, pp. 400–403, 1958.
- XIII. A method of programming of proofs in mathematics for electronic computing machine, Nagoya Math. J., vol. **16**, pp. 195–203, 1960.
- [12] On sieves and primes, with J. Maryak, University of Maryland Tech. Report 2, Computer Science Center, 1963.
- [13] Moscow Congress report (Japanese), Sugaku, vol. **19**, pp. 6–10, 1967.

Books and monographs written in Japanese:

- [1] Sugaku Kisoron (Foundations of Mathematics), Iwanami Publishing Co., Japan, 1933.
- [2] Shugoron (Set Theory), Kyoritsu Publishing Co., Tokyo, Japan, 1938.
- [3] Number Theory—Fundamentals of Algebraic Number Theory, with Tomio Kubota, Asakura Publishing Co., Tokyo, pp. 1–309+iii, 1963.

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