Announcements

Professors **E. C. Titchmarsh** (1—6—1899 to 18—1—1963, well-known for his book on the Riemann zeta-function), **Yu. V. Linnik** (8—1—1915 to 30—6—1972, well-known for his seven cube theorem i.e. there exist only finitely many natural numbers which cannot be expressed as sums of seven positive integral cubes) and **J. E. Littlewood** (9—6—1885 to 6—9—1977, well-known for bringing to lime light and developing jointly with **J. H. Hardy** the extra-ordinary potentialities of the **Ramanujan-Hardy Circle Method**, like applications to Waring's Problem and Goldback conjecture), are three of the followers of the **Hardy's** school of thought. This volume is dedicated to their memory. They have other deep contributions, but these besides being deep will surely catch the eye of any common man. We are happy that **Littlewood** could live (we believe a happy life) to a ripe old age. When **Ramachandra** visited **Trinity College** in 1978 he missed him by a few months.

Distinguished Awards of the Hardy-Ramanujan Society have been conferred on **R. Apery, G. V. Choodnovsky** and **R.Tijdeman** for their discoveries of which the following are quite famous.

Theorem : (R. Apery) *Whatever the natural number* m, *the number*

$$m \sum_{n=1}^{\infty} n^{-3}$$

is never an integer.

Theorem : (G. V. Choodnovsky) *Put* $\beta = \sqrt[5]{2}$, $\alpha_1 = 2^{\beta}$, $\alpha_2 = 2^{\beta^2}$, $\alpha_3 = 2^{\beta^3}$ *and* $\alpha_4 = 2^{\beta^4}$. *Then out of these last four numbers, three of them (we do not know which three !) say* β_1, β_2, β_3

have the following property. Let f(x, y, z) *be any polynomial in three variables with integer coefficients not all zero. Then*

$$f(\beta_1, \beta_2, \beta_3) \neq 0.$$

Theorem: (R. Tijdeman). *There do not exist integers* m, n, p, q, *with* p > 2, q > 2, m > 2, n > 2 *satisfying*

$$m^p - n^q = 1$$

apart from m = 3, p = 2, n = 2, q = 3.

Remark: Actually Tijdeman's result asserts that there are no solutions if max (m, n, p, q) > Exp (10^{1000}), so that in order to prove the theorem stated, a finite amount of calculations is yet to be done. Tijdeman's result became possible by the application of some of the extra - ordinary results of A. Baker on the linear forms in the logarithms of algebraic numbers.

The distinguished awards carry £ 20 each (approximately) meant for the purchase of the collected work (one volume) of mathematicians such as Hardy, Littlewood, Davenport, Turan, Linnik. The magnitude of the award is not important. The award is an indication of the respect of the society to their work.

We regret to announce the passing away of Professor D. Suryanarayana (10—7—1934 to 8 - 8—1981). He was one of the most useful members of the Hardy Ramanujan Society. He was responsible for setting up of a good school of workers on Analytic Number Theory at Waltair, India. For his services to Indian Analytic Number Theory he was awarded a posthumous award of Rs. 100/-. The magnitude of the award is not important, but is an indication of respect to his services to the branches of Mathamatics for which the Society stands for.

Due to some reasons the paper "A foot-note to a paper by Ramachandra on transcendental numbers" by K. Ramachandra and S. Srinivasan will appear in vol 6 (1983).

It contains results such as $\sum_{n=1}^{N} \delta(2^{\pi^n}) < \frac{1}{2}(-1+\sqrt{16N-7})$

where $\delta(x) = 0$ when x is transcendental and $\delta(x) = 1$ if x is algebraic. Amongst other results we quote only two namely

$$\sum_{n=1,\ n \text{ square}}^{N^2} \delta\left(2^{\pi^n}\right) = O\left(N\left(\frac{\log\log N}{\log N}\right)^{\frac{1}{2}}\right)$$

and that

$$\overline{\lim_{N\to\infty}}\left(\left(\sum_{n=1,\ n \text{ cube}}^{N^3} \delta\left(2^{\pi^n}\right)\right)N^{-1}\right) > 0$$

This paper was to have appeared in Vol 5 (1982).

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