

CORRESPONDENCE

Yellapragada SubbaRow centenary year (1895–1995): The issue of multiple centenarians?

A recent issue of *Nature*¹ featured a whole series of centenarians and fractions and multiples thereof. By a coincidence, this issue reached us only a day after returning to Pune after a national-level meeting and activities in Delhi related to the centenary year of the well-known Indian biochemist Dr Yellapragada SubbaRow. Table 1 summarizes, for this centenary year of SubbaRow, his contributions to biochemistry and, as we now call it, biotechnology. The centenary year is an eye-opener for several of us of the subsequent generations (though we all know only too well of the popularity of Fiske and SubbaRow's² method of estimation of inorganic phosphate, comparable to that of Lowry's³ protein estimation), thanks to the efforts of Gupta and Milford⁴, who wrote his biography to *literally bring home* the extent of his contributions.

The biographer being even more self-effacing than SubbaRow himself in avoiding value judgements, the biography leaves open the whole issue of the rather complex life and character of SubbaRow. Having read his original correspondence to his family in his native tongue, Telugu (assiduously collected by Gupta and made available at National Archives for the general public for the first time), I see the prudence in refraining from judgements.

Some were curious about the involvement of SubbaRow in Ayurveda, the Indian theory of medicine, in which he did help compile some texts. In all fairness to Indian Ayurveda as well as to SubbaRow, it is clear that he disengaged himself from that phase of his academic life in India even as he did with his own family. His subsequent work of substance in the USA at Harvard and at Lederle Laboratories ran

Table 1. The first centenary year of Y. SubbaRow (1895–1995)

Contribution	Centenary	Reference
1. Phosphate, microestimation	2/3rds (1925)	2
2. Phosphocreatine	2/3rds (1928)	5
3. ATP*	2/3rds (1929)	6
4. Folic acid	1/2 (1945)	8, 9
5. Hetrazan	~1/2 (1948)	10
6. Aureomycin	~1/2 (1948)	11
7. Methotrexate as the first antimetabolite	~1/2 (1948)	12
8. First production of vitamins by fermentation with dramatic reduction of costs	~1/2 (1946)	13

*Credited to Lohmann⁷.

clear of these earlier involvements. It would be erroneous to claim that he tried to synthesize western with Indian medicine in an attempt to eulogize his achievements. It is necessary that we feel humble in these days of megabucks in research when faced with the contributions of this one man against such odds in an alien environment.

- 1 Heilbron, J L and Bynum, W F, *Nature*, 1995, **373**, 11–14
- 2 Fiske, C. H and SubbaRow, Y, *J Biol Chem*, 1925, **66**, 375–400
- 3 Lowry, O. H, Rosenbrough, N J, Farr, A L and Randall, R J, *J. Biol. Chem*, 1951, **193**, 265–275
- 4 Gupta, S P K and Milford, E L., *In Quest of Panacea*, Evelyn Publishers, New Delhi, 1987
- 5 Fiske, C. H and SubbaRow, Y., *Science*, 1928, **65**, 169–170.
- 6 Fiske, C H and SubbaRow, Y, *Science*, 1929, **70**, 381–382
- 7 Lohmann, K., *Naturwissenschaften*, 1929, **17**, 624–625
- 8 Angier, R B, Boothe, J M, Hutchings, B L, Mowat, J. H, Semb, J, Stokstad, E L R, SubbaRow, Y, Waller, C, Cosulieb, D B, Fahrenbach, M J, Hultquist, M F, Kuh, E, Northey, E H, Seeger, D R, Sickels, J P, and

Smith, J M., *Science*, 1945, **102**, 227–228.

9. Angier, R B, Boothe, J M, Hutchings, B L, Mowat, J H, Semb, J., Stokstad, E L R, SubbaRow, Y, Waller, C, Cosulieb, D B, Fahrenbach, M J, Hultquist, M E, Kuh, E, Northey, E H, Seeger, D. R, Sickels, J P, and Smith, J M, *Science*, 1946, **103**, 667–669
- 10 Kushner, S., Brancone, L. M., Hewitt, R I, McEwen, W I., SubbaRow, Y, Stewart, H W, Turner, R. J and Denton, J. J, *J Org Chem*, 1948, **13**, 144–153
- 11 Harned, B K, Cunningham, R W, Clark, M C, Cosgrove, R, Hine, C H, McCauley, W J, Stokey, E., Vasecy, R E, Yuda, N N and SubbaRow, Y, *Ann NY Acad Sci*, 1948, **51**, 182–210
- 12 Oleson, J J, Hutchings, B L and SubbaRow, Y., *J Biol Chem*, 1948, **175**, 359–365
- 13 Hutchings, B L, Stockstad, E L R, Bohonos, N, Sloane, N and SubbaRow, Y., *Ann NY Acad Sci*, 1946, **48**, 265–267

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