

There is everything in a name

There is no doubt that taxonomy has a unique status in biology as it is both the 'queen' and 'servant' of biology; queen since it is the ultimate and servant since it provides the basic information on any organism to scientists working in other areas of biology¹. People have slowly started realizing that taxonomy is no more an 'esoteric' art, but an 'exoteric' discipline. The most important functions of taxonomy are to identify an organism and assign a name to it. As mentioned by Ganeshiah², the Chinese proverb, 'The beginning of wisdom is to call things by their right names' duly emphasizes the importance of correct names to organisms, irrespective of whether the organisms are christened on the basis of their characters, place of occurrence or after somebody. What is important while naming a species is whether the name has been assigned after faithfully following the guidelines laid down by ICBN or ICZN³. A botanical name, consequently should have in sequence a generic name, a specific epithet and the name of the author (in full or in abbreviated form) who gave that name to that plant. There should be no punctuation mark between the specific epithet and authority. A name without the authority is incomplete.

What bothers us the most is the increasing tendency of biologists working in areas other than taxonomy (sometimes in taxonomy too) to give scant respect to properly reproducing the correct names of taxa on which they had worked, while publishing their results in journals. This was substantiated when

we had critically gone through the ten volumes of *Current Science* from 1990 to 1999. We had screened 217 articles where 1601 vascular plants have been studied in some aspect or the other. Only in about 60 articles were the names of plants correctly reproduced. The most common mistake was mentioning of the botanical name without the accompanying author's name. This has been done in 514 of the total 1601 names. Sixty-one names are accompanied by wrong author citations. There were mistakes in the spelling of names of plants or authority in 49 taxa. Mistakes pertaining to punctuation marks, abbreviations, absence/misuse of parentheses, etc. were found in 33 names. Invalid names were also employed. For certain taxa, wrong family names have been provided. In some articles the same plants have been cited differently in different places. Nomenclatural mistakes were present in the titles of the papers themselves in 29 instances, which accounts for 13.4% of the total 217 articles mentioned earlier. There were also abbreviations of the generic names to their first letters when the taxa were mentioned for the first time in the text and in one or two instances in the title of the article itself.

To completely avoid the recurrence of such mistakes in a journal like *Current Science*, we suggest the following steps.

(1) Authors of manuscripts should be clearly instructed to mention the correct names of plants/animals/microbes as per the respective codes when they report their studies. This should be mentioned

in the 'Instructions to Authors'. The Editorial Board should also seek the assistance of professional taxonomists in case of doubt regarding the validity of names used and especially when the referees of the paper are not competent taxonomists. (2) The generic and specific names should be *italicized* in the manuscript; appropriate instructions should be given to the authors regarding this. (3) The manuscript must include reference to the voucher specimens of the plants/microbes examined. Such specimens should be deposited in a recognized institution/herbarium which permits the verification of their identity if needed. This is followed in a number of journals like *Planta Medica*, *Phytochemistry*, *Pharmaceutical Biology*, etc.

1. Sivarajan, V. V., *Introduction to Principles of Plant Taxonomy*, Oxford and IBH Publishing Co, New Delhi, 1984, p. 4.
2. Ganeshiah, K. N., *Curr. Sci.*, 1998, **75**, 412.
3. Janardhanam, M. K., *Curr. Sci.*, 1998, **75**, 1103–1104.

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Science, education and religion

The editorial 'Creationism, Astrology and Science' in *Current Science* (2000, **79**, 1139), presents a mindset of Indian scientists, who follow traditions such as fixing of auspicious times consulting a *panchangam* and using horoscopes for marriage alliances, while calling them 'private superstitions'. The basis of these traditions is not understood, as those do not find a place in education. Basing on one person's view that As-

trology can never be a Science, the editorial calls for a crusade of Science against Astrology. A statement such as 'when events appear to overtake us and are swept along by circumstances beyond our control, we attribute our misfortunes to the planets' results from ignorance.

A prayer from Upanishads is: 'Lead us from unreality to reality, from darkness (ignorance) to light (knowledge)

and from death to immortality (*Asatoma Sadgamaya, Tamasoma Jyotirgamaya, Mrityorma Amritam Gamaya*)'. The quest for truth and right knowledge has been the goal of religion. Sciences such as *Nyaya Sastra* and *Tarka Sastra*, aim to combine perceptual knowledge with inference, developed from debates between schools of Vedanta, Buddhism and Jainism. The conflict in the West was between the beliefs of the Christian

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Church and the results of scientific research. Galileo became convinced of the Copernican theory that the planets revolve about the sun and with the telescope he had built, made observations conflicting with the *Bible*. Galileo was prosecuted for heresy and spent his last years under house arrest. Similarly, Darwin's theory appeared alien to the Church.

With regard to Astrology (*Jyotisha*) and Education,

- *Jyotisha* is one of the six *Vedangas*: *Siksha* (Phonetics), *Vyakarana* (Grammar), *Chandas* (Metrics), *Nirukta* (Etymology), *Jyotisha* (Astronomy, including relevant Mathematics plus Predictive Astrology) and *Kalpa* (Rituals). For an introduction to the works of Aryabhata, Bhaskara, Varahamihira, the basics of time and the limbs of *Panchanga* (*thithi*, *nakshatra*, *yoga*, *karana* and *vara*) see ref. 1.
- The Indian conception of TIME is sophisticated. On the macrocosmic scale a *Mahayuga* is of 43,20,000 years. On the microcosmic scale, a unit of time, *Truti* (33750th part of a second), has been mentioned.
- Indian literature, such as the *Mahabharata*, abounds in astronomical data.

Studies in Ancient Indian History need this knowledge. There is a considerable knowledge base (human expertise, textbooks, journals and databases) on Astrology.

- Even subjects such as Artificial Intelligence (AI), aiming to build smart machines for tasks requiring human intelligence have been criticized. There are always believers, non-believers and social critics.
- A liberal education enables one to see the world with all its miseries, mysteries and marvels and lets him form his own mental model of the world. Acharya Sankara said '*Viswam darpana drisyamana nagari tulyam nijantargatam*' in hymn to Dakshinamurti. (A seeker questions his guru: 'We speak of things as existing and appearing? Are they true, real and what is their relationship to the ultimate truth?' The seeker is advised to see the universe existing within Him, like a city seen to exist within a mirror.)²

Scientists should avoid taking 'holier than thou' attitudes while talking of education. Science has produced nuclear, chemical and biological weapons. Ethics has only been of recent concern

to Indian scientists^{3,4}. In summary, the editorial summarizes a non-existent threat to Science. (The cartoon is in poor taste.) Subjects such as Astrology have their place in the educational system. Science has enough credibility to stand on its own strengths. UGC is only fulfilling its obligation to the society at large in starting courses on Astrology. This will not have any effect on Science education in the country. The credibility and strengths of Science education will depend on the honesty and commitment of the scientists themselves.

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1. Balachandra Rao, S., *Indian Astronomy – An Introduction*, University Press, Hyderabad, 2000.
 2. Sri Sankaracharya, *Dakshinamurti Stotra*, Samata Books, Madras, 1978.
 3. Reddy, Amulya, K. N., *Curr. Sci.*, 1999, **77**, 1134.
 4. Valluri, S. R., *Curr. Sci.*, 1999, **76**, 1181.
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IF: A case of richness in poverty

It is gratifying to note that *Current Science* is rated top among the journals in India with an Impact Factor (IF) of 0.567. Undoubtedly, *Current Science* has become one of the most popular science journals in the country and I congratulate the effort that has gone on to make it so successful. However for a young reader like me, it is also

disheartening to note that the IF of *Current Science* coincides with the decimal digits of the IF of the topmost journal of the world (*Annual Review of Immunology*, IF = 47.564). Assuming the rate of increase in IF over the last decade, *Current Science* will reach the IF of the topmost journal in just about 2856 AD! I wish *Current Science* well,

and hope it reaches and inspires many more of our students.

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