ever, biomedical experts advocated invasive liposuction as the only possible remedy. Ayurvedic experts had many non-invasive oral treatments to offer.

Other topics discussed included the quality of life assessment in ayurveda, methods to improve *twak prasadana* (health of skin) in ayurveda and free papers on Vitiligo and HIV/AIDS. S. Jamal made a presentation on how he managed filarial lymphodema using nodo-venous shunts. He said that a combination of nodo-venous shunt and integrated treatment would give faster results. Regina Foster (Foldi Clinic, Germany) gave 4 h of demonstration, spread over 3 days, on how to treat lymphodema using Foldi's technique. In her talk on Foldi technique, she felt that integrated management of filarial lymphodema is almost similar to Foldi's technique but being implemented in a more difficult clinical background.

1. Addis, D. G. *et al.*, *Am. J. Trop. Med. Hyg.*, 2004, **71**, 12–15.
2. Narahari, S. R. *et al.*, *Lymphology*, 2004, **37**, 673–677.
3. De, M., *Curr. Sci.*, 2005, **89**, 1661.
4. Proceedings of the National Seminar on Evidence Based and Integrated Medicine for Lymphatic Filariasis. In *HIV/AIDS and other Chronic Dermatoses* (eds Ryan, T. J. *et al.*), IAD, Kasaragod, India, 2005.

S. R. Narahari*, K. S. Bose and **K. S. Prasanna,** Institute of Applied Dermatology, Nayak's Road, Kasargod 671 121, India. *e-mail: srnarahari@satyam.net.in

Thankful, or thankless?

Srinivas Bhogle

On the eve of his retirement as NAL's Director in 2002, I asked T. S. Prahlad what fraction of his time as Director he spent 'usefully'[1]. I expected him to say 'about 50%', but he surprised me by replying '25%' in all seriousness.

This was about five years ago. I wonder what directors in CSIR, DRDO and other publicly-funded national establishments feel today. It would be no surprise if today's figure was well below 25%.

In fact, we are rapidly heading towards a situation where a capable scientist, researcher or professor would rather *not* accept a leadership role. This is very worrying because it leaves the door open for an incompetent individual to take charge, and eventually seriously hurt the institution.

Why are the best now unwilling to accept leadership roles? Why has a once coveted job suddenly become thankless? We will try to list the inhibiting factors, but in no particular order.

You really can not do much: The director of a national R&D establishment is severely shackled. He[2] might step in with many ideas and a grand vision, but he is, day after day, told by the 'administration'[3] that the rules do not permit Action A, Action B… or, indeed, any intelligent action. The director has to be really brave to stick to his resolve over long periods of time; most eventually succumb, or mellow to permissible levels.

There is no worthwhile enabling infrastructure: It is a common misconception that the director's post is very powerful; much is made of the director's 'powers' and his enormous 'delegated authority'. In reality, this does not add up to much. The director might sanction expenditure, but it will take a long time before that money can actually be spent; he might sign a purchase file, but the delivery will be made six months later! And during these six months, the director will have to intervene six times to push the file. The truth is that the director can only be effective if he has a good enabling infrastructure – and he is usually saddled instead with an abysmal supporting system.

No effective power: The accepted management wisdom is that a good leader cleverly toggles between the carrot and the stick. The director of a national lab or institute however quickly discovers that a stick will take him nowhere: if he orders his administrative officer to act in a certain way, the officer will slyly refer the matter to the HQ 'for consideration'; if he forcefully imposes his will on a department head, the heads will gang up to defeat this initiative. Suitably chastised, the director will opt for the carrot … but he will soon discover that a mere carrot will not suffice; it must be multiple – and juicy – carrots.

The mundane overwhelms the magnificent: Over the years, most national labs have become too director-centric. The director must apparently be involved in everything: clearing most administrative files, approving air travel by a private airline for an 'ineligible' colleague, or presiding over every farewell party to greet a retiring colleague (as institutions age, retirements are multiplying). Sometimes it is the nature of the director's personality that compels him to get so intimately involved in mundane activity, but usually it is something more sinister: everyone's passing the buck, and the buck stops with the director. If it is the sort of file that will set an auditor's or vigilance officer's eyeballs rolling, the administration will 'protect' itself by seeking the director's signature.

The best are going away: One of the great joys of leading an R&D establishment is to work with intelligent colleagues to create great knowledge and technologies. This was always hard in a national lab because of the poor enabling environment; but it may now become impossible as talented scientists, lured by high salaries and better work conditions, leave in large numbers and new talent refuses to come in. How is the director to work his magic in such circumstances?

Endure nonsense from bureaucrats: Directors, especially new and weak directors, must also reckon with the severe pressures that they face from the bureaucrats at the HQ. The Delhi bosses love to

dominate, and enjoy sending off long notes to directors seeking updates on performance indicators, or explanations for apparent transgressions – all this, of course, 'within the next seven days'. The director must eventually learn how to vanquish these arrogant intrusions, but he must also wonder why he accepted the directorship when it involved putting up with such nonsense.

It's lonely up there: Most directors find that their job cuts them off from the rest of the lab: they have to meet a lot of strangers, travel frequently, attend far too many worthless meetings, and grapple with too many official documents and reports. They also end up spending a lot of time with the same small handful of colleagues; this is by design, not chance! The director is thus condemned to be a very lonely person, unless he makes a significant effort to break free.

Poorly paid: Finally, and this is a serious concern by itself, the director of a national lab is very poorly paid especially if you consider the nature of his responsibilities and the variety of roles that he must play. The numbers simply do not add up! Scientists who grew through the system might still covet the director's post, but for most others this is simply a very thankless job.

1. 'Usefully'? It may be easier to describe what is *not* useful. Examples: (a) sitting in a meeting for 2 h, when 15 min are sufficient, but the meeting meanders on with a lot of irrelevant talk; it is usually about rules, and what Swamy says or does not say, or some gossip about what is happening at the HQ; (b) signing at least a hundred files or notes every day, every week, every month!; (c) presiding over a farewell meeting – preceded by high tea – to eulogize the achievements of a retiring colleague; (d) declaring open the 13th annual basketball meet at the other end of the town; (e) deposing in the Sessions Court in the 'illegal' ad hoc appointments case; (f) receiving a memorandum from some aggrieved group and countering their searing hostility; or (g) travelling to Delhi for a meeting with the Minister which had to be postponed 'owing to unforeseen circumstances'.
2. I write 'he' deliberately; we have had very, very few lady directors.
3. The greatest change inhibitor is what is collectively called the 'administration': this entity is supposed to support the R&D establishment's core functions and activities; in reality, it often grievously hurts performance.

Srinivas Bhogle, Cranes Software International Limited, 4th Floor, Block 1, Shankaranarayana Building, 25 M.G. Road, Bangalore 560 001, India
e-mail: Srinivas.Bhogle@cranessoftware.com

RESEARCH NEWS

Exciting developments in plant stem cell research

Vageeshbabu S. Hanur

Continuous production of new organs and postembryonic elaboration of architecture throughout the life cycle extending often even decades, is a unique ability of higher plants. This requires the steady availability and maintenance of a reservoir of undifferentiated stem cells at the apical meristems. Along the axis, the upper shoot apical meristem (SAM) produces all the aerial organs like stem, leaves and flowers, whereas the root apical meristem below the ground level produces the primary and lateral root systems. The SAM, which acts as a self-renewing source of pluripotent stem cell populations, becomes a source of initiation of new organs. It is amazing to understand that all the parts of a plant, from the smallest plants to the giant trees, are continuously developed systematically from a few cells, i.e. stem cells residing in the meristematic region. Rate of (asymmetric) stem cell division is balanced with the rate of loss of stem cells due to consumption of cells towards differentiation, and this balance results in the maintenance of critical mass of stem cell pool. In plants, fine mechanisms exist to establish the stem cell pool immediately during embryogenesis as well as to maintain this pool throughout the life cycle. Termination of the stem cell maintenance occurs with the formation of inner whorls of the flower, particularly the carpels (gynoecium) in the inflorescence meristems. How this critical mass of stem cells is delicately maintained throughout the life cycle of a plant in SAM, has been the subject of intense research in the field of plant biology. Availability of mutants coupled with genetic, molecular and biochemical investigations has opened up this extremely interesting field of plant stem cells, with equally stimulating questions and challenges.

The establishment of stem cells and their maintenance in the SAM involves the coordinate orchestration of several genes connected by interlinked signal transduction pathways in different zones as studied mainly in *Arabidopsis*. The stem cells are maintained mainly in the central zone of the meristem dome in three layers in tunica corpus. Below the L3 layer, the organizing centre (OC) niche contains a few cells that act as the progenitors of the pluripotent daughter stem cells present in these layers. Three genes, *WUSCHEL*, *CLAVATA* and *SHOOTMERISTEMLESS*, are major regulators of stem cells[1].

The *WUSCHEL* (*WUS*, 'bushy' or 'tousled-looking' in German) gene is responsible for the continuous production of stem cells and is regarded as the master regulator. *WUS* encodes a novel subtype of homeodomain-containing nuclear transcription factor that belongs to a different class from the KNOX (KNOTTED-like HOMEOBOX) family. Expression of *WUS* starts as early as the dermatogen stage of embryogenesis. In the active SAM, *WUS* is expressed not in stem cells per se, but in a small group of cells underneath the presumed stem cell population in the OC, affecting the fate of the stem cell in a non-cell-autonomous fashion. The *CLAVATA* (*CLV*, 'club-like' in