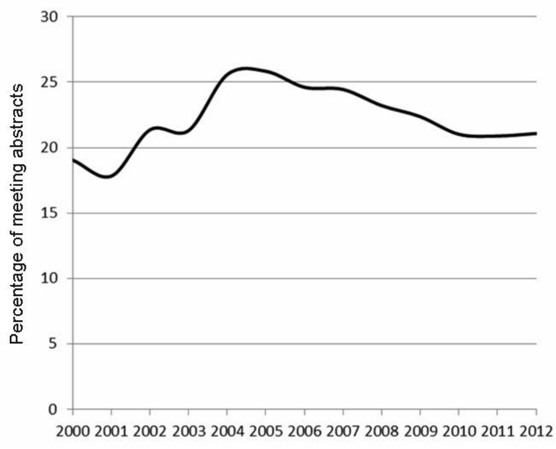

Figure 1. Percentages of meeting abstracts in Life Science and Biomedicine (*Web of Science* data).

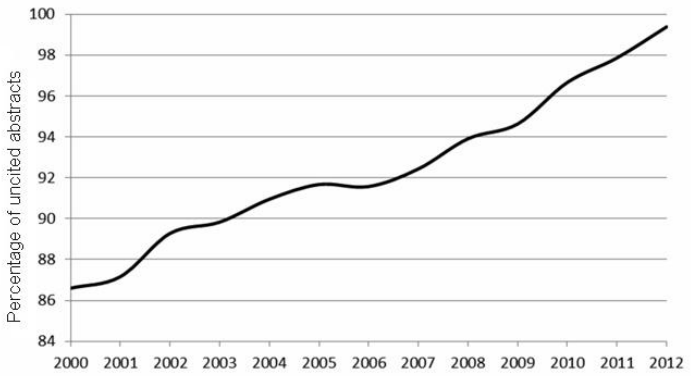

Figure 2. Percentage of uncited meeting abstracts.

cite it if they use it in their research (D. K. Niu; H. Yu, pers. commun.). Yet, this does not explain why the authors of the abstracts themselves do not cite them.

As mentioned above, publishing and especially formal publishing, is a costly business. Hence we propose that the colleagues in the biological and life sciences follow the trend of other disciplines[5] and publish meeting abstracts in dedicated archives. In this way they still can claim priority, if necessary, and do not take up space in formal journals.

Moreover, in view of the new trend of using altmetrics–influmetrics in research evaluation such archives, in the wake of the famous arXiv developed by Paul Ginsparg, may give their contributors extra visibility[6].

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Management of *Leptocybe invasa*

The note entitled 'Present status of eucalyptus gall insect, *Leptocybe invasa* Fisher and La Salle in Tamil Nadu'[1] highlighted the fact that this gall-inducing eulophid (Hymenoptera) is spreading rapidly in different parts of India, wherever different species and sub-specific variants of *Eucalyptus* are raised as commercial plantations.

Jacob and Kumar[2] characterized levels of susceptibility and resistance by measuring the densities of galls on *Eucalyptus camaldulensis* and *E. tereticornis* seedlings from nine seed sources raised in Tamil Nadu, Kerala and Andhra Pradesh, demonstrating that under identical environmental conditions, seedlings from seed sources 'Ongole red', 'Kennedy River', 'Pudukkottai' and 'Rudrapur' were severely affected and therefore were more susceptible to *L. invasa* infestation. Seedlings from seed sources 'Sathyavedu 1' were least susceptible and were therefore resistant to *L. invasa* population. The study also revealed that in resistant seedlings the eggs of *L. invasa* were deposited in the cortical region immediately outside the vascular ring, whereas in the susceptible seedlings the eggs were found in the parenchyma within the vascular ring. The study demonstrated variation in physical characters in different seed sources of *E. camaedulensis* and *E. tereticornis* grown in southern India to varying levels of susceptibility to the gall-inducing *L. invasa*.

The insect is a major pest of young eucalyptus trees and seedlings, and affects commercial forestry. To overcome this problem there is a need to evaluate the resistant traits using molecular tools. The *L. invasa* population is generally hard to manage because of its concealed habit. Moreover, gall-inducing insects show distinctly different behaviour as against their non-gall-inducing relatives; consider the oviposition behaviour of *L. invasa* in different varieties of *Eucalyptus* acclimatized to southern India. Therefore, it would be incorrect to apply a generalized insect behaviour model to understand the behaviour of these insects to launch management practices.

Another eulophid *Quadristichus erythrinae* is rapidly spreading that live on the shoots of an ornamental garden plant *Erythrina indica* (Fabaceae) by inducing amorphous growth[3]. A few years ago, while in Taiwan (2008–2009) I looked at *Q. erythrinae*–*E. indica* interactions. I observed that various fungal taxa (e.g. *Fusarium*) were associated with this interaction and the fungus induces the amorphous growths on *E. indica* shoots and *Q. erythrinae* is an associate in this context. These observations are yet to be confirmed. Given that *L. invasa* is an eulophid, rapidly similar to *Q. erythrinae*, and also that the abnormal growth on different *Eucalyptus* species is amorphous, I suspect whether the growth inducer is a fungus or *L. invasa* could be an associate in these systems.

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Uttarakhand had early warning communication in 1894!

In 1894 there were incessant rains and cloud burst in Birahi area of the then Garhwal now Chamoli district of Uttarakhand. There was a river known as Birahi Ganga, a tributary of Alaknanda which meets at Birahi and exists even to-day. Due to heavy rain a part of the mountain in Birahi valley was detached which blocked the course of the river and subsequently an artificial lake was formed known as Gohna Tal (lake). This artificial lake, referred to as gravity lake, was formed by landslides or sliding of mountain on the path of a river. The then British Government established a telephone line between the site of the lake, and particularly the towns Chamoli, Srinagar, etc. located downstream. The connectivity was made to send warning message to the people to evacuate and move to safer places in case the artificial lake breaches. According to my father, this was the first telephone line established in that region, just 10 years after India had first long distance telegraph link from Agra to Kolkata in 1884. The Gohna lake did not breach and it became a tourist place and people from all over India used to enjoy boating in the Gohna lake. However, the same connectivity from lake side to downstream towns continues even today.

In June 1968, a similar lake was formed at Reni on the bank of Rishiganga, a tributary of Dhauli river which is also a tributary of the river Alaknanda and its confluence is Vishnu Prayag, close to a well developed town Joshimath situated en route to Badrinath from Rishikesh/Haridwar via Birahi. On 20 July 1970, i.e. nearly after two years this artificial lake on Rishiganga/Dhauli river breached and the river got flooded and the Alaknanda became hostile.

On the same day, there was a heavy rain and cloud burst in the high mountains of Belakuchi and Birahi valley. The area surrounding Belakuchi was washed away and the river Alaknanda got over flooded. The 76-year-old Gohna lake also breached and huge amount of lake water flowed along the Birahi Ganga which meets at Birahi, say 28–30 km downstream from Vishnu Prayag.

So, both the lakes breached on the same day at different times and both rivers (Alaknanda and Birahi Ganga) were loaded with thousands of cubic meter water from the lakes along with uprooted trees, rock debris, mud, etc. The already flooded Alaknanda river with excess water from the so called Reni lake and cloud burst from Bellakuchi reached Birahi, where another flooded river Birahi Ganga with excess water from Gohna Tal could have created havoc if the water flux from both the rivers had reached the confluence point at the same time. But, there was about half an hour difference between the water flux fronts of both rivers meeting at Birahi. So, water from the first lake, i.e. Dhauli could pass which was followed by water from Gohna lake. Due to this time difference, water front did not resonate to create 'mini-tsunami'; however, flood front followed one after another for about 10 dark hours, causing huge loss to the towns like Alkapuri in Chamoli, Nandprayag and Srinagar.

Had heavy loaded water carrying Alaknanda from Vishnuprayag and Belakuchi and another Birahi Ganga met at the same time in Birahi, then the tragedy along the Alaknanda valley after Birahi could have been similar to what we saw on 16 and 17 June 2013, particularly in Kedarnath valley. Such events are rare, but are becoming frequent and such events are termed as extreme events[1].

The extreme events are the consequences of global and local changes. The change of global environment parameter such as rise in temperature is attributed to rise in CO_2 concentration in the atmosphere. The man-made changes of local environment such as changing the course of the river for developing a new township or launching new projects and widening the roads are affecting stability of the mountain slopes rendering them prone for more land slides. The extreme events in Uttarakhand are due to global and local disturbances.

There is urgent need to observe man-made changes and its effect on environment by installing a modern warning system to monitor: (i) movement of cloud and cloud bursts, (ii) stability of mountains to watch potential land slides and (iii) precursors which normally are seen before a major earthquake, etc.

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