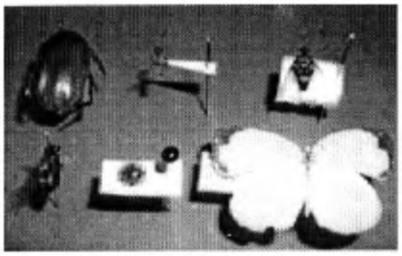

Figure 2. Different types of insect mountings.

workers seriously engaged in the taxonomic study of insects in India[8]. Taxonomy that deals with identification of insects is a basic requirement to know their correct names prior to taking up any kind of studies on them. However, rampant collection of precious species of insects in the field for the sole purpose of submission of specimens to fulfil the curriculum requirement without proper training in taxonomy does not serve the purpose. More importantly, it affects insect biodiversity of a particular region.

About 60,000 insect species are described in India and 0.4–0.6 million or more insect species are yet to be discovered and catalogued[8]. Hence, insect taxonomy in the curriculum is crucial to train students in India. As different types of mounting (Figure 2), preservation, and naming of diverse species of insects are part of the basic training in taxonomic study, students could be asked to collect various household insect pests such as cockroaches, houseflies, mosquitoes, ants, and other agricultural pests for this purpose. A batch of students should not be allocated to collect the same species of insects (which are not pests) in large numbers from the field for paltry submission of specimens. Using existing laboratory specimens or utilizing a few vital specimens from the field, students could be trained meticulously in taxonomy.

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M. G. VENKATESHA

Department of Studies in Zoology,
Bangalore University,
Jnana Bharathi Campus,
Bangalore 560 056, India
e-mail: venkatmelally@gmail.com

Incidence of a mosaic disease in *Jatropha curcas* L. from eastern Uttar Pradesh

Jatropha curcas L. (Ratanjot) is an important multipurpose plant belonging to the family Euphorbiaceae. It is cultivated mainly for non-edible oil on wastelands to prevent soil erosion and as a field barrier. To some extent, the plant has gained commercial importance due to its thriving capacity in varied regional climates. During routine survey, serious disease symptoms were observed on a large number of *J. curcas* plants in various localities of Balrampur District, Uttar Pradesh during the rainy season of the year 2005. The symptoms consisted of mosaic from mild to severe, marked reduction in leaf size, rolling of leaf margins and puckering of leaf surface. Chlorotic areas of irregular shape were present between the secondary veins (Figure 1 *a* and *b*).

Transmission tests were conducted with seeds collected from diseased plants. The seedlings remained healthy showing that the seeds do not transmit the disease.

Sap transmission from diseased leaf to healthy, vigorously growing test plants of *J. curcas* seedlings that were raised in an insect-proof chamber was done in the usual manner using carborundum powder as an abrasive. Test plants developed mild mosaic after twenty days showing that the disease was sap-transmitted. The disease was also transmitted by cleft graft in new shoots showing typical symptoms of the disease, thus confirming its viral nature. Attempts to transmit the disease by dodder (*Cuscuta* sp.) failed.

The disease could not be transmitted to any other plant, except *J. curcas*. Attempts made by sap inoculation and grafting to *Nicotiana glutinosa* L., *Lycopersicon esculentum* Mill., *Solanum melongena* L., *Datura stramonium* L. and *Carica papaya* L. were not successful. Insect transmission trails were conducted with *Aphis cracivora* Koch, *Aphis nerii* B. and *Bemessia tabaci* Gen. The test insects were allowed to feed on diseased plants for 24 h. These were then released on 30-day-old *J. curcas* seedlings. Ten to 15 insects were allowed

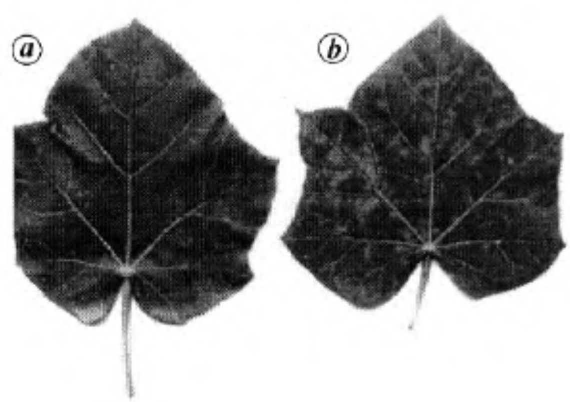

Figure 1. ***a***, Healthy leaf of *Jatropha curcas* L. ***b***, Infected leaf of *Jatropha curcas* L. with mosaic symptoms.

to feed on each test plant for 24 h. Glass chimneys with their top covered by muslin cloth were used to confine the insects to the test plants. After inoculation feeding, the insects were killed by spraying 0.05% Follidol and the plants were placed in an insect-proof chamber for observation. There were no symptoms of disease even after 20 days, suggesting both the species of aphids and white flies failed to transmit the disease.

The symptoms of the disease described resemble to some extent, those produced by the tobacco leaf curl virus on some of its hosts, and transmitted by white flies[1]. However, the virus causing disease in *J. curcas* L. is not transmitted by white flies. Moreover, chlorosis, which is so prominent in the case of the disease in *J. curcas*, is not common on plants attacked by tobacco leaf curl virus. The virus causing disease in *J. curcas* described by Garga[2] is not transmitted by sap. The virus causing disease in *J. curcas* in the present study is transmitted by sap, and thus differs from that reported earlier[2]. Transmission tests with the tobacco leaf curl virus vector, the white fly (*Bemessia tabaci* Gen)[3] also gave negative results.

The disease reported herein resembles the leaf curl and chlorosis in symptoms described earlier[3,4], but is not transmitted by white flies. The virus causing the disease in *J. curcas* should therefore be considered as a distinct record of a mosaic. Further studies on characterization are in progress.

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J. P. TEWARI*
HIMANSHU D. DWIVEDI
MADHVI PATHAK
SUBODH K. SRIVASTAVA

Department of Postgraduate Studies and Research,
MLK(PG) College,
Balrampur 271 201, India
**e-mail: jp_botany@yahoo.com*

NEWS

MEETING REPORT

Whither the alluvial fan research?*

Alluvial fans are depositional landforms whose surface forms a segment of a cone radiating downslope from a point where major drainages leave mountains. Knowledge of the fan-building process, its depositional facies, and stratigraphic build-up is important for exploration of economic deposits, groundwater prospecting, contaminant-dispersion problems, and in hazard prediction and mitigation plan for expanding human settlement on the fan surfaces in the mountainous regions.

In recent times, the definition of alluvial fan and its deposits has been the subject of a major controversy. It was proposed[1] that alluvial fans are distinctly different from and are virtually devoid of stream-channel deposits, and they form, small, coarse-grained sediment cones, having surface slope of 1.5° to ~25°, made up exclusively of debris flow or supercritical sheetflood deposits. Attempts were made to show[1] that geomorphology and sedimentology of braided streams (commonly believed to be a major component of alluvial fans) are different in being lens-shaped, cross-stratified gravel reflecting channelized lower flow regime condition. A natural slope gap between 0.5° and 1.5° was identified based on the observation that the slope of the studied fan surfaces exceeds 1.5° and the rivers commonly slope less than 0.5°. However, many of the earth scientists contradicted this view[2–4]. The debate prompted SEPM (Society for Sedimentary Geology, Tulsa, USA) to convene the first meeting on alluvial fans at Death Valley, California in 1995. As the debate on the definition of alluvial fans continued[5–7], and as newer experimental and field data continue to emerge[8,9], a second meeting[10] on alluvial fans was convened at Sorbas, Spain in 2003. Alluvial Fans 2007, convened at Canada was the third meeting of the series. Sixty participants from 21 countries discussed 38 oral and 18 poster presentations, spread over deliberations of three days and cushioned with two one-day field trips visiting some of the major alluvial fans of the Canadian Rockies. pre- and post-conference field trips were also organized to examine in more details some of these active fans.

Presentations in the meeting can be divided into four major categories: (1) Experimental studies and computer modelling of fans, fan deltas or related deposits. (2) Geomorphologic investigation of fans. (3) Study on the deposits and stratigraphic architecture of fans of Quaternary or older age, supported by high resolution chronology. (4) Hazard mitigation and management of fan-related environment. In an opening review of alluvial fan dynamics, Adrian Harvey (University of Liverpool) pointed out that the major controls of the fan sedimentation include geometry and lithology of the source basin, controls of the delivery system through climate and sediment supply, and basinal controls guided by base level. He illustrated the effect of these controls on fan sedimentation, with examples from Basin and Range Province of United States, Scotland and Oman. Harvey suggested that with better identification and quantification of different controls of fan development, it is possible to develop a genetic

*A report on the third meeting on alluvial fans held during 18–22 June 2007 at Banff, Albert, Canada and sponsored by St. Mary's University, Society for Sedimentary Geology, International Association of Sedimentologists, British Sedimentologists Research Group, Canadian Geomorphology Research Group, Canadian Geophysical Union, British Columbia Ministry of Forests (www.husky1.stmarys.ca/~pgiles/AF2007/AlluvialFans2007.htm).