

## Observations from the Hybridizer— Natural Pollination of a *Cymbidium* Flower

*Text and Photos by* LOREN BATCHMAN

We have all heard that insects, usually bees of a number of different species, are the natural pollinators of cymbidiums and other orchids, but seldom do we actually have the privilege to see the process in person. I have a *Cym. insigne* that normally flowers in November, and often sets seed pods naturally, but I had never seen the actual pollinator before.

However, on November 23, 2008, I happened to notice a strange black bump in one of the flowers. Closer investigation showed it to be one of the native bumblebees we often see around the house and nursery, and it was buried in the flower. It wasn't moving much, so I took a few minutes and got the camera to get a photo of the guilty culprit in action.

It seemed that the arrangement of the lip and column in this flower was a rather tight fit, or perhaps this particular bee was old, decrepit, weak or possibly intoxicated from something in the flower, but it took quite a while for the bee to actually escape the flower. It had a good deal of difficulty getting out of the flower, and it seemed that backing out of the flower wasn't an easy operation. It would make the motions to back out, but always seemed to get caught in the flower. It would rest ten seconds or so, then try again. Finally, it managed to turn sideways on the lip and was able to work its way out of the flower.

The process took at least 15 minutes, including the time it took to get the camera. The bee didn't fly off once it had escaped

the flower, but spent the next few minutes crawling around on the flower petals, and eventually crawled to another flower, apparently exhausted from the process. It seemed to have a serious attachment to this plant, and was back in another flower the next day.

Given the time of year, the bee may have been at the natural end of its life as the nest prepared for winter and lack of food. I also found complete pollinia attached to a petal on another flower and as this was the only cymbidium with open flowers at the time, I assume it came from this plant.

Interestingly, the pollen cap didn't come off the flower in the process, but the bee escaped with the pollen on its back. Also, the pollen was upside down with the crease on top, rather than on the bottom as one would expect. Perhaps the twisting necessary to escape the flower had twisted the pollen position.

The bee had apparently also visited at least one other flower before, since there was pollen deposited in the stigma of the flower it had escaped from and the bee had the two pollinia from a flower on his back. The flower eventually started to develop into a seed pod as well, providing proof of successful pollination.

We have seen these bees resting overnight on cymbidium lips a number of times, neatly tucked in under the column. Usually, the flower is large enough that the bee escapes without disturbing the pollen or pollen cap, but this particular

bee species may be responsible for the occasional unplanned developing seedpods seen in the nursery.

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For the past 30 years, he and his wife, Nancy, have operated Casa de las Orquideas, a small orchid nursery in Solana Beach, California, specializing in high color, odd and unusual cymbidiums. They have exhibited cymbidiums and other orchids at shows for the last 37 years.



Having forced its way into a flower of the southeast Asian *Cym. insigne*, a bumblebee native to California finds itself tightly wedged in the throat of the flower and struggles to extricate itself.





Unable to back away from the flower's lip and column, the bumble begins to twist sideways in what will eventually be a successful attempt to escape.



The bee twists almost completely around and manages to free itself from the column of the flower.



As the bee emerges from between lip and column, the flower's pollen is clearly visible on its back. Note that despite all its struggles, the bumblebee surprisingly did not dislodge the pollen cap.



The results of the bee's visit are evident some time later in the form of a ripening seed pod.