

# How the Cicada's Story Came to Life



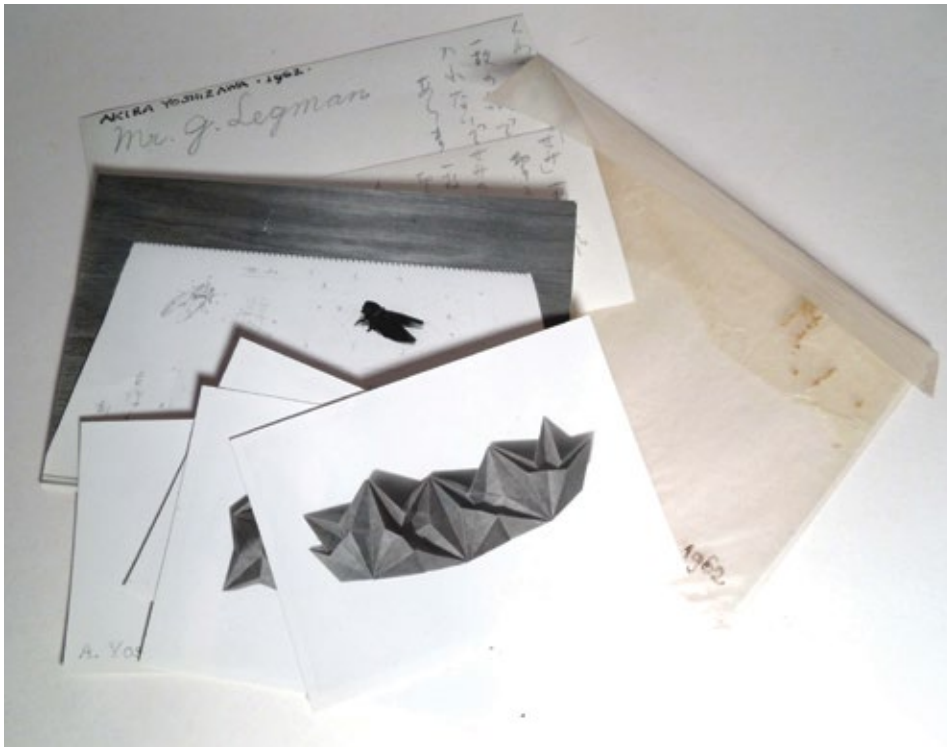
Gershon Legman and Akira Yoshizawa corresponded for more than twenty years on a wide variety of topics related to paperfolding.

by Laura Rozenberg  
(Buenos Aires)\*

About a year ago I emailed Robert Lang with a startling photograph. It was the picture of a finished origami model, a Goliath beetle, with its crease pattern sketched on a notepad. On the back of the picture, the name “Akira Yoshizawa” appeared in black ink. There were other photos in the same translucent envelope, all of them of about the same, tiny size. On the envelope, a date had been written in thick black strokes — 1962— which I immediately recognized as Gershon Legman's handwriting.

The envelope and photos were part of Gershon Legman's origami archive that I had been organizing during the last couple of years. Inside the boxes there were hundreds of letters signed by the “big names” of the origami movement, such as Robert Harbin, Samuel Randlett, Neal Elias, and Akira Yoshizawa. Also, there were many photographs, clippings, and models by those great artists. While these precious letters would eventually reveal interesting aspects of the origami community and their relationships in the early days of the movement, I also found “hidden pearls” like the mysterious little pictures of the beetle and other insects, all of them with crease patterns. From the moment I found them, I knew they were special. They looked more like the insects that flourished in the glorious years of the Bugs Wars in the 90's, but... in 1962? That seemed way too advanced!

Yoshizawa was an extraordinary artist, but all of his books presented quite simple models. What made them special and beautiful —and almost impossible



A group of pictures that Akira Yoshizawa mailed to Gershon Legman early in 1962. Among them, the finished cicada, its crease pattern and collapsing stages.

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to reproduce perfectly— was something beyond the simple fold: it was the magic of his hand, and that cannot be explained in a stepfold diagram. The beauty resided in the way he modeled the paper after he completed the basic folds. Only an artist with extraordinary sensibility could shape them as he did. Instead, the beetle in the picture was not only a great model but also had something inherently difficult. The diagram depicted a complex array of crease lines and, most strikingly, it had circles. At first glance, it looked like circle packing, a technique that was unknown in the early 60's. Puzzled as I was, I decided to request the help of Robert Lang, an expert in circle-packing and the author

of *Origami Design Secrets*, the “bible” of all origami techniques.

“This is a very interesting page!” exclaimed Robert in his email reply. I was excited that he also found it special. He explained that it was not circle-packing but “grafting.” What was that? Robert thought that Yoshizawa-sensei used circles to “identify and/or group points.” In his own words, “he was doing what we now call 'grafting' to add paper to an existing design.” And that was cool!

Then Robert asked if I could provide a higher resolution version of the image, and I replied with a total of four pictures (the ones that had been kept in the

translucent envelope). One was the beetle, another had cicadas in two stages of development—a nymph and an adult—and the last two pictures showed the process of collapsing the paper. And that's when Robert got really excited.

The additional scans not only provided sharper images: they included the structure of Yoshizawa's cicada, which, unknown to me until that very moment, had been an inspiration for Robert's own cicadas over the years.

“More interestingly,” Robert said, “the structure of the cicada seems to be a tessellation of bird-base crease patterns on a rectangle,” which was the same structure Robert used in his own first cicada developed in 1984 (it can be found in his *Complete Book of Origami*). To Robert, that was way too cool. “Of course, Yoshizawa was doing his [cicada] when I was 1 year old!” he chuckled. I proposed Robert to write an article for *The Paper*, on this striking finding, and he immediately accepted with his usual generosity. The story would deal with the cicadas (not the beetle), and how Robert's and Akira's models resembled each other. Then, coincidentally, Robert was asked to write a forward for Akira Yoshizawa: *L'Arte Dell'Origami* an upcoming Italian book about the master. As a result, he produced the story for this issue (pages 13-15), and the expanded version for the book to be released in 2016 by Snake SA. 🐍

\* I would like to thank Robert Lang for all of his amazing work. He has been an inspiration for all of us in terms of passion, talent, and commitment. I also want to thank Marcio Noguchi for writing and translating emails to Mrs. Yoshizawa, back and forth. Without his help this story of the cicadas would not have been possible. I also thank Mrs. Yoshizawa for permission to use the images found in the archives of Gershon Legman's origami collection of documents and related material.