



From the Editor...

Have you noticed how vivid the leaves are becoming? We had a Summer drought followed by plenty of rain and a cold snap in October. This created a rainbow effect on Bradford Pears, displaying all the Autumn leaf colors in various stages on a single tree. With Autumn comes Elections in November. All elected positions – President, Vice President, Secretary, and Treasurer are open for nominations. Program director is also available.

Have you secretly dreamed of being a writer? You can **live** your dream by writing articles for the newsletter. I know many of you have entertaining stories to tell. I will insure that your stories are told just in case you are shy. There will be a feature article each month spotlighting one of you fascinating people.

Complete list of Refreshment Volunteers



November – Debbie & Jerry Miller

Tar Heel Gem & Mineral Club October Minutes

Meeting was called to order at 7:30 by the President. He asked if there were any changes to be discussed of the By-Laws from the last meeting. Tom Bapple made a motion to accept the changes, Corinne Hummel seconded, motion passed.

New Business – The President requested club members to bring in knowledgeable people or other members to identify rocks & gems for a future meeting, “Gem & rock ID nite”. The most knowledgeable club members would be “drafted” to make the identifications. Slides might accompany the program.

Corinne will check with the Greensboro Gem & Mineral Club to purchase next year’s faceting calendars.

Joann Lail will renew or begin your subscription to “Rock & Gem”.

Field trip scheduled for November 9th, has been moved to the 16th.

The President handed out copies of the By-Laws to review. Voting was tabled on this until the November meeting.

Tom won the drawing and will select his item in November.

Elections will occur in November.

Gem & Mineral Shows

November 23-24	Fairfax, VA Northern VA Club 11 th annual show
November 29 - Dec 1	Columbia, SC Columbia Club’s 25 th annual show
December 6-8	Greensboro Coliseum, NC Greensboro Club’s 30 th annual show
January 7-8	Asheville, NC GL & W wholesale show



ANNOUNCEMENT

John Sinkankas, 87, who died May 17 in California, was a prolific writer and illustrator. He wrote more than 15 books and more than 100 articles on gems and minerals over five decades. His *Gemstones of North America, Volume III*, published in 1997, updated earlier versions of 1959 and 1976. A gem cutter, he devised a faceting machine, half again the conventional size, and cut such gems as a 7,000-carat quartz egg and a 2,054-carat golden beryl. Both are in the Smithsonian’s Natural History Museum. In 1988, the Gemological Institute of America in Carlsbad, California, acquired his 40-year collection of gem books and memorabilia of over 14,000 items. The collection is the core of the institute’s Richard T. Liddicoat Library, one of the largest of its kind in the world. He was a Navy pilot from 1937 – 1961 and took a correspondence course from GIA while in the Navy. He contributed to *Rocks & Minerals* starting in 1948 and, after retiring from the Navy; he accepted a position as an editor of *Lapidary Journal*. He continued to share his knowledge and fascination of earth science all his life. (Originally excerpted from an article in *The San Diego Tribune*, June 2, 2002 and adapted from *The Rockbounder*, July/August, 2002.)

Bang! Splat! Tunguska!



On June 30, 1908, a horrendous explosion occurred in the sky above the central Siberian wilderness near the Tunguska River. The concussion from the blast, estimated at 20 megatons of TNT, leveled trees in an area nearly 40 miles wide. Oddly, the detonation produced no crater or other evidence of impact.

Over the past 80 years, dozens of explanations for the Tunguska Event have been proposed. These varied explanations have suggested comets, black holes, nuclear explosions, antimatter, asteroids, and even alien spacecraft as the cause.



Recently, Christopher Chyba (now at NASA-Goddard Space Flight Center), Paul Thomas (University of Wisconsin at Eau Claire), and Kevin Zahnle (NASA-Ames Research Center) conducted a computer simulation that strongly suggests that the culprit was a stony asteroid, the most common class of meteorite. The simulation indicated that a stony asteroid about 100 feet in diameter and moving at a speed of about 10 miles per second would disintegrate at a height of about 5 miles above the ground -- approximately the same height at which the Tunguska object is believed to have exploded.

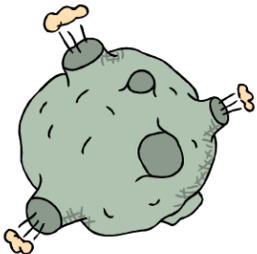


In their analysis, the researchers determined that an iron-rich object, which is twice as dense as a stony asteroid, would probably not have exploded at all, meaning that a crater would have been produced. Lighter objects, such as a comet or a carbonaceous asteroid, which are about one-fourth the density of a stony asteroid, would explode too high, thereby not inflicting as much damage on the ground.

Chyba and associates explained that a stony asteroid would suffer "catastrophic fragmentation" on its trip through the atmosphere. This would increase the surface area of the meteorite and, hence, the heat generated by friction against the air. The heat would, in turn, cause large amounts of meteoritic surface material to be vaporized, and thus produce the explosion.



Assuming that the Tunguska event was, indeed, produced by the explosion of one of the most common classes of meteorites, what are the chances of another Tunguska-like event happening on Earth? Duncan Steel, of the Anglo-Australian Observatory in Coonabarabran, New South Wales (and a member of the committee that produced the NASA Report of the Near-Earth-Object Detection Workshop) comments: "The thing which may be wrong with most of the discussion is that it is generally assumed that such objects hit the Earth randomly in time. This is daft in that we know that a good fraction -- perhaps even the majority -- of the mass influx of smaller meteoroids hit the Earth in showers (meteor showers).



"These occur as the Earth passes through the meteoroid stream produced by an asteroid or comet. They recur each year since the smaller particles produced by the cometary decay are spread around its orbit from the comet nucleus. However, there is a concentration, especially of the larger particles, close to the cometary nucleus.

"The above would lead to the following occurring: a few random incoming Tunguska-type objects every few centuries, but every millennium or so there will be a phase in which every few years/decades there is a large number of Tunguska-type events spread over a week or so. This I call 'Coherent Catastrophism,' and catastrophic it would be. Indeed, I believe, it 'has been,' judging from the historical record, since this is what is going on at the moment, with us now (late 20th century) being in a hiatus between mass influxes."

Via Lithosphere (February 1993); Fallbrook Gem and Mineral Society, Inc.; Fallbrook, CA

CAROLINA CHATS

By Carl Goerch

(note—from the perspective of 1944, not copyrighted, help yourself)

PART IV –

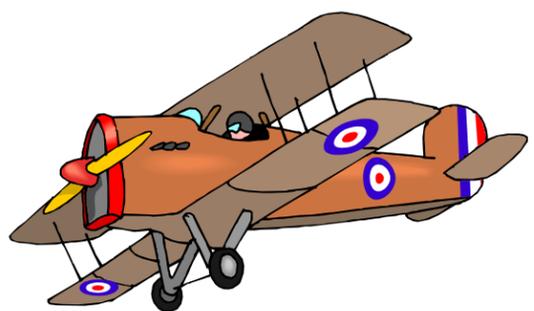
Experiments in Aviation

Most of us can recall one particular event that gave us a greater thrill than anything else. My greatest thrill came in 1932.

For two or three years prior to that time I had been taking advantage of every opportunity to get a trip in an airplane. Whenever one of the old-time "barnstormers" would come to Washington, he could always count on me for at least one trip. The price in those days was \$15.00 for a five-minute flight (a small fortune in the depression era, editor).

The manager, Warren Pennington "Penny", of the airport down in Wilmington used to come to Washington quite frequently. He had an open plane – a Commandaire with a Warner motor- and sometimes he would let me take hold of the controls in the forward cockpit. I got so I could steer a fairly straight course and keep the ship at a level altitude. Penny always took charge when it came to landing and taking off, although he permitted me to keep my hands on the stick so that I could "follow through" as he guided the ship.

One Sunday morning, Penny called me from a New Bern hotel. "I've got the plane over here. Why don't you drive over and fly back to Washington with me?" On our way out to the airport, a few miles from town, I brought up a subject to which I had been giving serious consideration. "How about letting me fly the plane back to Washington?" I suggested. "You can fly most of the way," said Penny. "I mean how about letting me fly it by myself, and you go back in the car?" He looked at me in amazement. "Hell!" he exclaimed. "You couldn't possibly make it." I assured him I could. I reminded him of the fact that I could maintain a straight course, that I had had my hands on the controls when he had taken off or landed, that I knew the country thoroughly and wouldn't get lost. And I also swore that if I did any damage to the plane, I'd pay him for it.



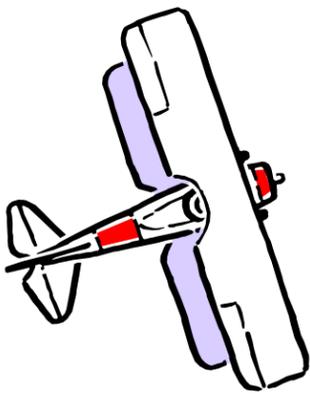
All he did was to shake his head. "Even if I were to let you do it, the inspector would take my ticket away from me and I'd get into all kinds of trouble." "Not if we handle it right," I told him. "You start the motor and let it get warmed up. Then you say that you forgot something at the hotel. Soon as you get out of sight, I'll take off." It took all of the powers of persuasion I possessed to get him to agree, but finally he did.

Sure enough, there were about a dozen people hanging around, inspecting the plane. Penny started the motor and let it run for about ten minutes. He then announced that he had forgotten some things at the hotel and set off.

As soon as the car disappeared around a bend, I put on a helmet and goggles and got into the plane. L. J. Holman, local newspaperman, walked up and said, "What are you fixing to do?" "Fly to Washington," I told him. "Do you want to go along?" "By yourself?" I nodded. "Not for a million dollars! He exclaimed, as he hurriedly backed away.

I accelerated the motor and the plane slowly moved toward the end of the field. I tried to turn it around, as I had seen Penny do on many occasions, but it wouldn't turn. So I got out and lifted it around. After advancing the throttle, the plane shot forward and in a few seconds I was in the air. I circled around the field until the altitude registered 1,000 feet. Then I headed for New Bern.

My first feeling of uneasiness occurred when I was flying over the Neuse River. I looked for the bridge that connects New Bern and Bridgeton. There was no bridge. I peered down from both sides. Still no bridge. Then I changed direction a little and a feeling of relief came over me when I observed that the bridge had been directly underneath. When I arrived at Bridgeton, I looked for the road that heads to Vanceboro and Washington. An aviator disregards all curves and side-paths to maintain a straight course. But I didn't. Whenever that road underneath made a curve, I made one too. When I arrived at Washington my altitude was 2,500 feet. I spotted the landing field just north of town. It was an open pasture about 1,200 feet long.



I dreaded to think of landing, so I flew over town for about ten or fifteen minutes. I could see automobiles driving toward the field, in case of a crack-up; I sure wouldn't lose any time being carried to the hospital. My gasoline was getting low. I decided I'd better land. Flying to the north end of the field, I turned around and pulled the throttle back. The plane glided downward. When I was about a hundred feet from the ground, I realized I was coming far too high and wouldn't even hit the field. So I advanced the throttle, went up again, and circled around. The second attempt was somewhat better, but I was still coming in too high. On the fifth trial, I grazed some cornstalks, hit the field and bounced two or three times and finally came to a stop with plenty of room left.

When the crowd came up to see who was flying the plane they almost had a fit. And you couldn't blame them very much; they knew that I couldn't fly.

Poor Penny had a very anxious time of it. Every time he'd come to a filling station, he would stop and ask the attendant whether a plane had passed overhead during the last few minutes. Informed that it had, he would breathe a sigh of relief and remark, "Thank God, he's got this far, anyway!" When he arrived at the landing field he expected to his beloved plane to be in a heap of wreckage. His relief upon seeing it intact was almost as great as mine when I had finally succeeded in landing.

I can live to be a hundred years old, but I know that never again will I get as great a thrill as I experienced when flying that plane by myself.

"But ... The Rocks Are All Wrong" by Richard Busch

The next time you go to the movies, watch the reactions of the other moviegoers to the screen. You'll notice that while the cat burglar deftly twirls the dial of the hidden wall safe and quickly opens it to reveal the priceless jewels within, all of the locksmiths in the movie theater shake their heads in disbelief. As the movie doctor operates to save the life of his dying "patient," the movie going **real** doctors in the audience roll their eyes to the ceiling.

Well, locksmiths and doctors are not the only ones to have their fields of expertise misrepresented by the entertainment industry. Geologists and gemologists, too, frequently grit their teeth at the silent indignities perpetrated on the movie or television screen. True, a geological inaccuracy rarely contradicts the central plot of the drama; but to those people properly attuned, a geological error of fact can undermine the basic premise of the story.

Some errors are so egregious that the situation is laughable. Remember the old *Superman* series on TV? To this day, I remember an episode in which the Man of Steel takes a lump of coal in his hand and squeezes it with such force that it changes into a diamond. That's ok if you accept the basic premise upon which *Superman* is based; but when Superman opens his hand to reveal the newly created gem, we see that it is complete with **facets** -- round brilliant, as I recall.

Some geological errors are not so obvious. Lisa Rossbacher points out several in the February 1993 issue of *Geotimes*. If you saw the movie *The Last of the Mohicans*, you'll remember the beautiful scenery -- rugged peaks and granitic rocks. The only problem was that the movie was supposed to take place in upstate New York where the Paleozoic sediments have been thoroughly glaciated to form rolling hills. The film was actually made in the Carolinas where the rocks are all wrong. Ms. Rossbacher cites other examples of geological errors in films. Here are some: *The Battle of the Bulge* features an exciting tank battle that is supposed to take place in the snowy Ardennes region of Belgium; halfway through the battle, we see the tanks rumbling through the Mojave Desert. *Rooster Cogburn* and *True Grit* are supposed to be set in Oklahoma and Arkansas. Unfortunately, the glaciated mountains in the background were set in Oregon and Colorado long before any movie makers set up cameras; glaciers never quite made it to either Oklahoma or Arkansas. The movie *Revolution* featured the Battle of Yorktown being fought, not on the gentle southeastern coast of Virginia, but rather on some high, white cliffs that bore a striking resemblance to the famous ones located on the southern coast of England. Continental drift? Hardly.

Geological errors are not restricted just to movies and television shows. In 1969, a novel written by Michael Avallone, based upon a screenplay written by Clifford Gould hit the bookstores. The name of the novel, chosen by someone other than Mr. Avallone, was *Krakatoa, East of Java*.

The true location of Krakatoa--southeast of Sumatra and **west** of Java--was not lost upon Mr. Avallone. In fact, he contacted the publishers and informed them of inaccuracy. Unfortunately, it appears that in some publishing and entertainment circles marketing takes precedence over geographical reality and, despite his efforts, the title of the book was not changed to reflect the truth.

This brings us to the megahit, *Jurassic Park*. Yes, we all know that *Jurassic Park* is a science fiction-fantasy-adventure film. But here's the way that science fiction is supposed to work: One or two (currently non-existent) scientific developments are assumed to have been made. Given those assumptions, the remainder of the film is supposed to operate logically and consistently within the framework of current knowledge and reality. In *Jurassic Park*, the assumption is that science has discovered a way to recreate living organisms solely from a sample of their DNA. Fine, we'll accept that as the premise of the movie. The rest of the story should conform to established scientific fact. Too bad that it doesn't.

The most obvious scientific errors in *Jurassic Park* have to do with size. Apparently Steven Spielberg likes his dinosaurs big. Both the gentle, vegetarian, Brachiosauri and the nasty ol' Velociraptors are depicted at about two to three times their real size. Not only that, but in one scene Spielberg has an especially plump brachiosaurus standing on its hind legs to munch veggies from a treetop. Impressive but given the size of the creature, it probably should have collapsed into a heap due to the relative weakness of its leg bones.

But not all of the 'sauri in *Jurassic Park* are portrayed as larger than life. The Dilophosauri are presented at about one-third of their real size, presumably to make this insidiously dangerous dinosaur look cute. Further, neither the Dilophosauri neck frills nor their toxic spit have been documented. As depicted in the movie, the Dilophosauri look more like "gremlins".

All of the above notwithstanding, the **real** error in *Jurassic Park* is that the rocks are all wrong. In the movie, the scientists get their dinosaur DNA from the belly of an insect that was found inside of a piece of amber. Ok -- no problem so far. But the movie goes out of its way to tell us that the amber came from the Dominican Republic; and this is where the error lies. Dominican amber has been dated at 20 to 40 million years. The dinosaurs died out 65 million years ago. Thus, the amber in the movie is at least 25 million years too young to contain remnants of dinosaur DNA. Spielberg could have chosen Lebanese amber (115 to 135 million years old) or Siberian amber (80 to 115 million years) or New Jersey amber (90 million years) or Alaskan amber (80 million years) or Canadian amber (70 million years). But, no; he chose Dominican amber -- and got it wrong.



Well, don't let the above comments deter you from seeing *Jurassic Park*. The special effects are terrific and the action is heart-pounding. Enjoy it, if you can. Just try not to think about the fact that the rocks are all wrong.

Via Lithosphere (September 1993) Fallbrook Gem and Mineral Society, Inc. Fallbrook, CA [This article won second place in the adult article competition in the American Federation of Mineralogical Societies in 1993.]