

CYCLOPIA FROM HOMER TO HEDGEHOG

Ronald S. Fishman, M.D.

The ancient Greeks had a taste for violence in their stories, brutal violence. The *Iliad* is almost one continuous bloodbath. The *Odyssey* also has a group of violent stories as it recounts the wanderings of Odysseus and his crew after the fall of Troy. They touch on places all around the Mediterranean, but when they stop at the island of the Cyclopes, they are imprisoned in his cave by the giant Cyclope, Polyphemus.

The mariners get the giant drunk and heat an olive tree branch in the fire, then ram the red-hot stake through the ogre's only eye. How many modern readers will visualize this scene with perfect equanimity? The ophthalmologist starts to squirm even sooner. It seems an extortionate price to pay. Here is the scene in Homer.

“Even so did we seize the fiery-pointed brand and whirled it round in his eye, and the blood flowed about the heated bar. And the breath of the flame singed his eyelids and brows all about, as the ball of the eye burnt away, and the roots thereof crack-

led in the flame. And as when a smith dips an axe or adze in chill water with a great hissing, when he would temper it... even so did his eye hiss round the stake. And he raised a great and terrible cry, which the rock rang around, and we fled away in fear, while he plucked forth from his eye the brand bedabbled in much blood.”

Great stuff, and since we know that Homer was nothing if not an accomplished raconteur, we know his audience enjoyed it. His story requires it, but nowhere does Homer actually say that Polyphemus has only one seeing eye, and nowhere the idea that it's in the center of his forehead. Did he assume his

audience already knew it? Could he really have resisted such a detail? It establishes the “monster-hood” of the giant too well.

There are in fact two different traditions about the Cyclopes, the other one described by the Greek poet Hesiod in his poem the *Theogeny* (origin of the gods). There they were sons of Uranus (the sky) and Gaia (the earth) and did have only a central eye in the forehead. They were often depicted as blacksmiths at the forge and provided thunderbolts to Zeus and the trident to Poseidon, which they used to overcome the Titans. Having only one eye seems a hazardous situation for a blacksmith. Probably during the

Bronze Age and early Iron Age it was so common for blacksmiths to have lost an eye from a spark or foreign body that myth incorporated this element in it.

At any rate Polyphemus since then has been depicted with a single eye in the middle of the forehead but with an otherwise normal face, two orbits, nose, mouth all undeformed.

One recent idea is that, with their islands being rich with fossils, the ancient Greeks were the first fossil hunters. They must



have found the giant bones of animals unknown to them, and, when they found incomplete skulls of mammoths or mastodons, they took the large central nasal opening for a single orbit. The real orbits were so much off to one side they looked like something else.

The figure of the Cyclops became mingled with the ancient folk tradition of the malevolent ogre and is still going strong in popular culture today. One example is the single eye of Sauron in the movie version of Tolkien's Ring stories. When the ring is thrown into the molten lava and vanishes, the tower crashes and the eye is destroyed.

Cyclopia showed up in some works in the pre-modern era where some legitimate congenital defects were combined with pure imagination to produce works on monsters, mostly apocryphal, such as in the illustration from the *Cosmographia* of 1572 by Sebastian Munster.

The "Sciapod" was described by Hippocrates as having a large foot that served as a sunshade. A fully grown woman with cyclopia is also depicted, with an anencephalic adult. Of course such adults never existed and the author is extrapolating wildly from hearsay inspired by the rare birth of stillborn infants. Conjoined twins of various types did occur and were included. We can only guess at what inspired the dog-faced creature on the right.



Two people should be specially credited with announcing the modern view of congenital defects. One was William Harvey

(1578-1657). We usually think of his work on the circulation but he was also a father of modern embryology. He studied chicken eggs and could see the organs forming from undifferentiated tissues, not already pre-formed and simply getting larger.

The other is a name we don't usually recognize—Étienne Geoffroy St. Hilaire (1772-1844). He ranks with Buffon and Cuvier and Lamarck as one of the great names in French contributions to biology. Among many other contributions to science, he made a convincing case that defects in normal development led to congenital malformations.



Cyclopia today is understood as an extreme form of *holoprosencephaly*. It has a prevalence of 1:250 during embryogenesis—so it's not rare—but these spontaneously abort so often that only 1 in 16,000 newborn infants show some form of the condition.

The extreme *alobar* form has an entirely misshapen middle face with an abnormal grotesque nose or proboscis that rises above the orbital area, as well as a single central eye AND a single orbit. A single optic nerve passes through a single optic foramen to the brain, without a chiasm. The most forward part of the brain—the telencephalon and the diencephalons—is malformed with a single large ventricle. These infants are almost always stillborn.

In a milder form—the *semilobar* type—partial cleavage does occur posteriorly but the cerebral hemispheres are maldeveloped and mental retardation, spastic quadriplegia or other CNS problems are almost always present. There are midface problems such a cleft lip and palate, a flattened nose and hypotelorism. Occasionally these infants live for a few years. A milder form yet—the *lobar* form—exists where the diagnosis is not made often until late childhood when the child is noted to have hypotelorism, a cleft palate and—the hallmark of a midline problem—a single central incisor. There is usually severe mental retardation.

Around 1957, an epidemic of cyclopia in lambs was reported in Idaho. An 11-year study by the Department of Agriculture identified the cause as the California corn lily or *Veratrum Californicum* which had invaded the pastures of the herds of sheep. It was found to contain a specific alkaloid that acted on the fetus as a potent teratogen. Fittingly enough, it was named *cyclopamine*.

The mode of action of cyclopamine has been pinpointed to its inactivation of the so-called hedgehog signaling pathways that are crucial to normal body patterning in development of the embryo. They are usually inactive in the adult but are reactivated in a variety of cancers, including medulloblastoma, pancreatic cancer and basal cell carcinoma. The current hope is that new drugs, inspired by cyclopamine, more selective and giving rise to fewer side effects than conventional chemotherapy, may be useful in the treatment of some resistant cancers.

If this turns out to be true, Homer could write a new epic about it.

Dr. Fishman delivered this paper at the Cogan Ophthalmic History Society meeting in April, 2009.

Pet Peeves

This past winter a colleague and I decided to attend a conference in a city three hours away. We preregistered, made hotel reservations, and also reservations for dinner in a restaurant suggested by the host conference group as “excellent.”

En route we observed the now expected violations of the rules of the road: speeding, repeated lane changing, tailgating, etc. We were held up in traffic on the interstate twice as screeching ambulances zoomed by in the break-down lane, and then as troopers and wreckers cleared the damaged remains of cars.

As we approached the road congestion of the city, many accidents were miraculously avoided by careless drivers who crossed three lanes of traffic from the right to the left to be able to make a left hand turn, or lane changes the other way around. Driver impatience (road rage?) was evident at every stop light as horns blared. Not very far from our hotel a box truck pulled up behind us and rode on our tail not more than three feet back. Suddenly the car in front of us stopped and we stopped, but the truck rammed our rear. After an hour of police interrogation, insurance form sharing, and arguing by the impatient truck driver, we proceeded with visible damages to the rear bumper and trunk.

Pet peeve: crazy drivers. The most dangerous component of a vehicle is the nut behind the wheel.



After a quick clean-up in our hotel, we walked to the restaurant where we had reservations. We were right on time. After waiting about a half hour to be seated we were handed menus, but the light was so poor we barely could read them. Was it ambience-or saving on the electric bill? We ordered cocktails which, by this time, were much anticipated. About five minutes later the waiter, sans cocktails, took our order and promised that the drinks would be “right out.” Another ten minutes and our salads appeared, sans cocktails. “Oh, I’m so sorry!” In about another minute our entrees arrived, obviously not freshly prepared, and still no cocktails. My colleague is very mild mannered as am I (on most occasions) but this was ridiculous so I let the waiter know of my displeasure. Again he said, “Oh, I’m so sorry!” The cocktails never appeared and needless to say we did not order dessert. The crowning blow was our inflated bill, including the cost of cocktails, with a neatly inscribed note: “It was my pleasure to serve you. (signed) Zeke.” For the first time in my life I did not leave a tip. After settling with the management we went back to the hotel bar for a nightcap.

Pet peeve: incompetent wait staff in an over-rated restaurant.

The first three speakers at the conference were well known sub-specialists with “see how I do it right” videos and power point presentations. They obviously enjoyed banter with some members of the

audience. My friend and I had decided to attend the conference because the keynote speaker was internationally known for his basic and clinical research using cutting-edge technology and we had special interest in his subject. When the speaker was introduced it was suggested by the moderator that a questions and discussion session would be appropriate after the lecture. The speaker had a power point presentation which flowed beautifully. About five minutes into his talk a member of the audience interrupted with a monolog of his own expertise on a branch of the subject being presented. Twice the speaker tried to say that he intended to address the issue later in his presentation, but the interruption went on until the ill-mannered individual obviously felt satisfied that **He** had been noticed.



Once again the rhythmic flow of the speech resumed and the audience showed rapt attention until a second Dr. Know-It-All interrupted with a soliloquy only tangentially related to the subject under discussion. When the speaker finally got back on track he came to points in his speech that related to the original interruption. To stay within the time schedule, he tended to hurry over the points and the continuity of the remainder was somehow less dynamic.

Pet Peeve: People (some doctors) who don’t know enough to shut up during a lecture, a play, a musical, whatever.

I have more pet peeves, but I guess I should shut up now.

DWP

AS I REMEMBER IT

Applying for an Ophthalmology Residency

Susan H. Day, M.D.

“Now, what we need here is a cute little thing like you.”

Beg pardon? Who said this, and why?

Would you believe this was what I was told by a very prominent ophthalmology department chair in 1973? As a medical student, I had discovered ophthalmology, and was venturing into the pre-match era of finding a program. It entailed initiation of interest to each residency program by an applicant; an extraordinary dance where the candidate was placed in a “do I accept a weaker residency before the better ones offer me a slot; do I gamble for something better; or do I go back on my word if I get something better?”

But there was an even larger obstacle: in many programs, women were not even considered for any surgical discipline. I had not realized this when I embarked on my self-arranged, scheduled interviews at 8 programs in 5 southeastern states, as far as my horizons reached at that point in my life. Not one program had ever taken a woman. It would have been easier to have been told that up front. The truth unfolded in various ways, from residents pulling me aside to the opening comment made at the outset of this article.

Being excluded turned out to be the best thing in my life. It led me to different geographies, different social philosophies, and different colleagues. Truly, the exclusionary element of ophthalmology demonstrated on this tour of programs allowed me to subsequently rub shoulders with some of the greatest giants in our field, and with individuals who advocated strongly for treating all people the same regardless of differences

such as gender, ethnicity, or cultural background.

We in ophthalmology owe a tremendous debt of gratitude to women who took initial steps to prove that chromosomal differences enriched ophthalmology. I personally tip my hat to the efforts of Suzanne Veronneau-Troutman, Bernice Brown, Marjorie Mosier, Marilyn Miller, and Penny Asbell. There are many more, undoubtedly, yet these are the ones that somehow touched my life. Their stories are far more compelling than my simple vignette—a time when much more than a stiff arm was often the order of the day.

This “remembrance” is one that has served as a lifelong lesson for me. The specifics of this example do not matter at all; I cannot imagine a more rewarding profession or greater career opportunities than have been given me. But the prevailing philosophy is one that deserves constant review: who is being de-selected before a chance is given? What assumptions are being made about patients, colleagues, or resident applicants before a fundamental essence is identified? How are our scotomata preventing a complete view of a situation?

As I remember it, I hope to make the world a better place.

Too Much Information

William S. Tasman, M.D.

At Wills Eye in the 1960’s the first year residents were assigned to harvest eyeballs from organ donors in funeral parlors. Among other things this occasional

As I Remember It Vignettes of the days of training and early practice.

SCOPE solicits interesting and entertaining vignettes of readers’ days of training and early practice. Please limit your submission to less than 500 words. Send submissions to scope@ao.org

obligation led to an interesting courtship with my wife. Since the hospital paid for the taxi to and from the funeral parlor, several of our evenings were spent in the back of a yellow cab.

That is not the point of this story, however. Several years after I finished training one of the first year residents was about to go out on his first cab ride to retrieve some eyes. The senior resident had gone over things in detail to the point where the first year thought that he had been overly instructed. When the first year returned with the eyes he went to the emergency room and asked for a bucket, filled it with water, and then asked for a bottle of ketchup. He poured the ketchup into the bucket and then separated a spaghetti mop from the handle and put the mop in the bucket. Then the senior was summoned. He came down, asked how things went and was told “well, pretty well. I had no problem with the right eye but encountered some adhesions in the left eye and because I was afraid I would damage the cornea, I decided that I would bring the head.”

I think he hooked the senior for about 15 seconds.



CHICAGO AND THE PALMER HOUSE

Neeshah Azam

Chicago—also known as the “Windy City” is the third largest city in America and the location of the Academy’s 2010 Joint Meeting with MEACO—Middle East African Council of Ophthalmology. Chicago is not new to the Academy or its members.

In 1936, Dr. William Wherry, the Executive Vice President of the Academy, wrote, “the expansion of activities has made it such that few hotels in the country can accommodate us, yet to change the plan and transfer the meeting places to civic auditoriums, seemingly would make of the convention just another big, unsociable, medical meeting, a program rather undesirable to the present... management.”



1947 Annual Meeting at Chicago’s Palmer House

At this time, regular attendance at the meetings was approximately 1,000 people and activities included scientific papers, instruction courses, motion picture exhibits, scientific exhibits and alumni events. Finding one hotel for rooms, meeting and reception space was proving to be difficult.

The Academy’s search for the ideal home for the meeting ended with Chicago’s Palmer



House. In pre-meeting materials published in 1937, the Palmer House was described as, “ideally situated, as well as ideally arranged, for the Academy meeting.” With the exception of 5 years, the Palmer House would remain the home of the annual meeting from 1937 to 1969. It was noted that the “yearly reunion at the Palmer House became part of the Academy’s tradition.” And it would remain that way for 32 years until increased meeting attendance would once again become a problem for the Academy.

By the 1950s, attendance surged to over 6,000 people, pushing the Palmer House to its limits. By 1969, attendance was over 8,500 and the Academy had no choice but to finally move its annual meeting to the much larger convention centers. While many Academy members were pleased to have the chance to see other cities during the meeting, Chicago remained a favorite. Since 1969, the Academy has been back to Chicago five times—other frequent hosts of the meeting have been Dallas, San Francisco and New Orleans.

Dr. Stanley Truhlsen, former AAO President, remembers: “when I was a resident the opportunity came up... the head [resident] being unable to go to Chicago, and I was offered the chance to go to the Palmer House for my first Academy

1937 Palmer House card.

meeting in 1949. It was a thrill, as a young ophthalmologist, to see the names and put faces on the people whose papers and books you



were reading... The Palmer House housed the entire Academy meeting. The exhibit hall would fit into one small corner of what we have now. They had a ballroom where the scientific papers were given, and [then the] small rooms housed instruction courses. Instruction courses were very popular, but somewhat limited in size. It cost \$2 a ticket to take an hour course... Sometimes if somebody like Ed Maumenee and John McLean were giving a talk on cataracts and sutures, they might have a room that would hold 30 or 40. That was considered “very popular.”

The Academy expects great attendance in the “Windy City” this year hopefully surpassing the excellent attendance of the 2009 Joint Meeting in San Francisco.



MAN'S BEST FRIEND?

David W. Parke, M.D.

Among dog and cat lovers there is a continual debate as to which animal is man's best friend.

A group of marine biologists, biochemists, pharmacists, physiologists, and infectious disease experts bypass those animals and believe that man's best friend is the horseshoe crab. This prehistoric creature with the helmet-shaped body and spear-like tail has helped us understand the physiology of vision and also has saved countless human lives.



The horseshoe crab, despite its name, is more closely related to spiders, ticks and scorpions than to crabs. There are four species of the family *Limulidae*, three of which are endangered species and not related to the subject of this discussion. The Atlantic horseshoe crab, *Limulus polyphemus*, gets its name from *Limulus*, meaning askew, and *polyphemus*, which refers to the giant in Greek mythology. This horseshoe

crab has been the subject of marine biological, physiological and chemical research for many years especially at the Woods Hole Oceanographic Institute in Massachusetts and at the Department of Sea Grant Research at the University of Delaware. The Nobel Prize in Medicine was awarded in 1967 to Drs. Ragnar Gramit, (Sweden) Haldan Keffer Hartline and George Wald (USA) "for their discoveries concerning the primary physiological and chemical processes in the eye." Dr. Hartline had done research in the early 1920s at Woods Hole on the anatomy and physiology of the two compound eyes of the horseshoe crab which he continued years later at the Johnson Foundation. Knowledge acquired from studying the horseshoe crab's compound eyes became a basis for much of his extensive work on the physiology of vision.

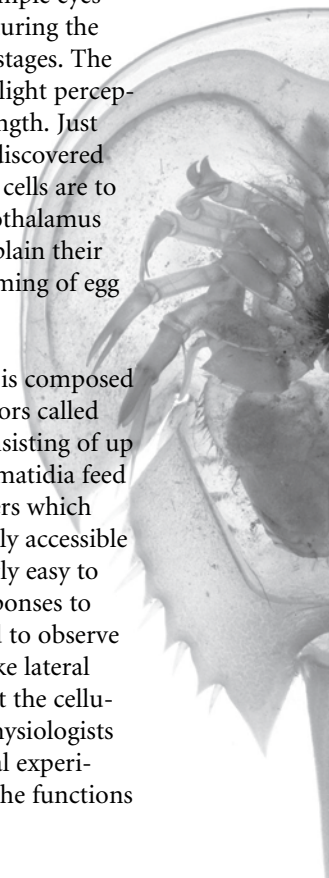
The *Limulus* is a "living fossil" whose origin dates back to Triassic times more than 250 million years ago, a time when the first dinosaurs appeared. Its body form has not changed over the years. Horseshoe crabs have three main parts to the body, which in the larger adult female can be as long as 24 inches including the tail. The head region is known as the 'prosoma', the abdominal region or 'opisthosoma' is somewhat smaller, and then the tail or 'telson.' The tail is not a weapon. It serves one real purpose: to assist the animal in turning over should a wave tip it on its back when it is near the shore. Horseshoe crabs are found mainly along the Atlantic coast, spending summers in shallow coastal waters and off shore in the mud in winter. Walking along the bottom, they feed mostly on sea worms and young clams. Professional clam diggers have claimed that the *Limulus* can destroy hundreds of clams as they feed and should not be a protected species. However, it has fed this way for millions of years and we

still have clams. The animal does not have claws, but has feeding and walking legs. It has no jaw and food is crushed by the feeding legs and moved to a mouth-like structure. Behind the legs are "gill books" which contain "leaves" of parchment-like material. They permit the exchange of oxygen and carbon dioxide.

Horseshoe crabs reach maturity in nine to eleven years and can live over twenty years. They have a hard outer shell or exoskeleton which sheds periodically in the growing process. Its new soft shell hardens in about twelve hours. Many of the "dead" *Limuli* found on the Atlantic beaches are the cast off shells of animal and are very exciting for kids to find.

Limulus has a total of nine eyes. There are two simple eyes, close together, near the front-central region of the prosoma carapace. They were thought to be cyclopean structures years ago. There are also three other simple eyes on the carapace and two on the underside just in front of the mouth. The simple eyes are important only during the animal's embryonic stages. The tail has a number of light perception cells along its length. Just recently it has been discovered that light perception cells are to be found in the hypothalamus of birds that may explain their migration and the timing of egg laying.

Each compound eye is composed of about 1000 receptors called ommatidia, each consisting of up to 300 cells. The ommatidia feed into single nerve fibers which are large and relatively accessible for research. It is fairly easy to record the nerve responses to light stimulation and to observe visual phenomena like lateral inhibition working at the cellular level. Later on, physiologists performed behavioral experiments investigating the functions



of visual perception in *Limulus*. Habituation and classical conditioning to light stimuli have been demonstrated, as has the use of brightness and shape information by males when recognizing potential mates. A host of other facts have been gleaned from studies of the retinula (literally “small retina”) cells which are seen morphologically similar only in the eyes of the silk worm moth. Research on the compound eyes of the horseshoe crab continues to this day.

Horseshoe crabs are also extremely valuable to the medical research, testing and therapeutic communities. Their blood contains the copper-staining protein hemocyanin. There are no red cells and therefore no hemoglobin to transport oxygen as in vertebrates. Hemocyanin is colorless when deoxygenated but becomes dark blue when exposed to oxygen. One might say that horseshoe crabs are true “blue bloods.” Hemocyanin carries oxygen in extracellular fluid in sharp contrast to oxygen transport in vertebrates. The blood contains only one type of cell, the amebocyte, which plays an important part in the defense against pathogens. Granules in these cells have a clotting factor known as “coagulogen” that is released outside the cell when bacterial endotoxin is encountered.

The clotting agent is *Limulus* Amebocyte Lysate (LAL) which contains an enzyme that is activated by endotoxins from gram negative bacteria. It is used as a fast and effective way of testing drugs to be sure that they are free of harmful bacteria before their administration to people. Pharmaceutical companies use LAL not only to test the sterility of drugs but also the sterility of intravenous solutions, kidney dialyzers, and to test spinal fluid when meningitis is suspected.

Chitin is a substance found in

the horseshoe crab exoskeleton, as well as the shells of other arthropods. It is nontoxic and when processed produces chitosan, a raw material used in the manufacture of a number of products including some contact lenses, skin creams and hair sprays. It is also used to remove lead and other harmful chemicals from wastewater. Because it binds with fats and passes through the body without being absorbed it is added to substances reputed to contribute to weight loss and also inhibits “bad” cholesterol uptake.

Female horseshoe crabs, accompanied by their smaller male counterparts, come ashore at high tide when there is a full moon in May and June along the Atlantic coast. Each female digs 8 or 10 shallow holes in the sand at the water’s edge and lays thousands of eggs which are then fertilized by the males. Most of the eggs are eaten by birds flying north for the summer. Those that are missed double in size in just a few days and split their outer layer. Moisture from the tides and the warmth of the sun causes hatching in two weeks. When born the tiny horseshoe crabs, which already look very much like the adult, dig their way out of the sand and enter the water. For a week they swim and eat their yolk sac then go to the bottom where they begin feeding. Horseshoe crabs continue to shed their exoskeletons and grow for nine to ten years. Thereafter they molt annually.

At Woods Hole, in Delaware, and elsewhere along the coast, people traveling by moonlight in what they call “crabmobiles” harvest thousands of horseshoe crabs to be brought to laboratories where they are bled and then returned to the sea. Even though about 70% of their blood volume is removed, they reproduce the blood in several weeks and usually are unharmed. Many volun-

teers assist in the crab-gathering and, though having fun, contribute greatly to the continuing ability to provide research possibilities and products so valuable to our health and well-being.

This ancient animal is in danger of becoming extinct. Since scientists have yet to find ways to reproduce LAL, we are very dependent upon their survival. The number of horseshoe crabs is being reduced by polluted waters and by their extensive use as eel bait by commercial fishermen. For a time they were also being crushed and used in fertilizers. Spawning time is its most visible and vulnerable period. Legislation to protect the animals, especially during the spawning season, is being enacted in some areas and should be encouraged.

Cats are soft, cuddly and purr. Dogs are devoted to owners, love to be patted, wag their tails and bark. But is it possible that the ugly, harmless horse shoe crab is man’s best friend? If you feel not, it certainly comes in as a close second choice.

The author’s interest in horseshoe crabs was sparked by a conversation with Marcia Copel, M.S., a new resident in my retirement community, who served for many years as a docent at Woods Hole and loved talking about these fossil-animals to tourists, especially children.

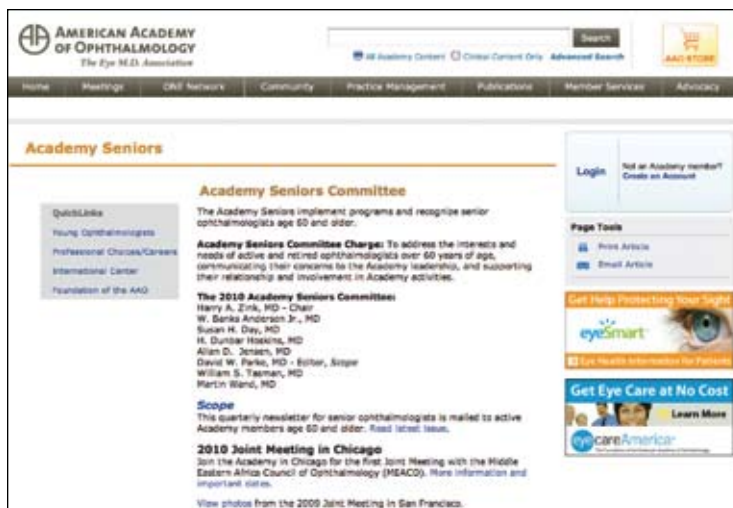


ACADEMY SENIORS COMMITTEE

Harry A. Zink, M.D.

The American Academy of Ophthalmology has over 45 committees to serve its members in advocacy, education, public service, meetings, and practice management. There is one committee, however, that was created to specifically address the issues of the senior members of the Academy—the Academy Seniors Committee. I would guess most of you are not aware of this committee, why it exists, and what it does.

The committee was first developed as the Senior Ophthalmologist Interest Group (SOIG) in 1996, evolving into the Academy Seniors Committee this past year. Over this time it became clear that there are some specific issues that were unique to Academy members as they moved through their practicing years and transitioned out of full-practice. Also, it is important that ophthalmologists continue to feel welcome in their Academy home whatever their practice status, life interests, or age. We all trained as ophthalmologists and having practiced most of our lives as ophthalmologists, will always have the identity of being ophthalmologists and Academy members. Meeting the needs of this group is the charge of the



Academy Seniors Committee. Here are some of its activities:

The committee is responsible for publishing *SCOPE*, although David Parke, Sr., the editor, is the heart and soul of the newsletter and has overseen its production for the last 8 years. *SCOPE* has a long tradition of articles that reflect the diversity of interests of our membership.

It addresses educational topics of interest by presenting symposia and courses at the Annual Meeting that focus on issues like practice transitions, enhancing computer skills, alternative practice structures, and others. Also at the Academy Seniors Special Meeting each year two presentations—one medical and one nonmedical—are given by guest speakers. This year's meeting will address the evolution of the eye and the design of Millennium Park in Chicago, our host city.

The committee created the Club Lounge where senior ophthalmologists during the AAO Annual Meeting can relax, meet friends, enjoy an ophthalmic photo archives collection and have internet access. There are also snacks and soft drinks.

Last year it began an oral history initiative with the Academy's Museum of Vision to record the stories of ophthalmology through the history of Academy

leaders, Academy Laureates, and members. These will be made available through the Academy Museum, the Academy Seniors Webpage and the Library of Congress.

The Academy Seniors webpages on the Academy's website is being enhanced to supply more content, including articles, archives of *SCOPE*, blogs, etc. that will be of interest to the older ophthalmologist.

Many of these initiatives were put in place under the past chair, Dr. Bruce Spivey. A person of immense energy and commitment to Ophthalmology, he helped to create a more focused approach to serving our senior membership and their needs.

Finally, the "fly in the pudding" must be addressed. Most of us continue to see ourselves as engaged, active, and productive and the terms like senior, older, and long term can make us a little uncomfortable whether we are practicing fulltime, part-time, or retired. A few years ago we had Annual Meeting ribbons that said "Academy Seniors" which many of you received and many threw away. This year we simply had "SO" on the ribbon for senior ophthalmologist and they were well received. We have learned a lesson—we may all be Academy Seniors but we don't want to brag about it.



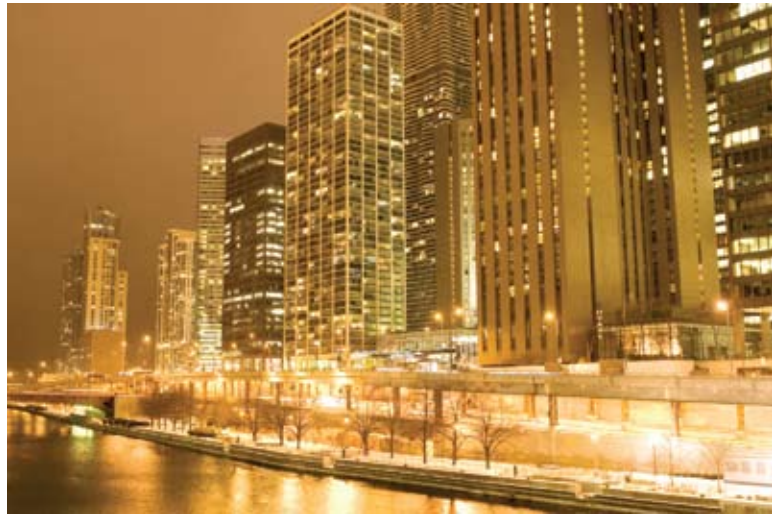
CANDLE POWER

W. Banks Anderson, Jr., MD

Centuries ago, without a moon, the nights were dark and the Milky Way easily seen. One candle, a burning oil wick, or a fireplace fire is sufficient for romance but borderline for reading or sewing. It took only a few hundred candles and Versailles mirrors for Louis XIV to become known as Le Roi Soleil. The king recognized both the importance of reflectors for his candles and the delights of bright light in the night.



There is no doubt that we do FEEL safer when bathed in sodium yellow night lights, but the evidence that such light actually deters crime is dim. In one attempt at gathering meaningful data, some community schools were left totally dark while others were left with illuminated building and grounds. The totally dark schools suffered less vandalism and theft than the illuminated ones. Other communities have found that turning off all of the street lights in the wee hours has not resulted in any major increase in district crime while creating significant energy savings. It should come as no surprise that criminals like to see who is around and often prefer daylight for their nefarious activ-



ities. Certainly, lighting up the clouds wastes energy. Offshore in a boat or up in an aircraft we have no difficulty in locating distant cities by their impressive night time glow.

One of Galileo's little telescopes was recently displayed at the Franklin Institute in Philadelphia. At his urban observing location Galileo had only to contend with a few oil lamps, candles and perhaps an occasional torch flame. Today's amateur astronomers use large apertures, blocking filters, and digital cameras with time exposures and image processing to overcome the light pollution in their backyards. Pollution is the correct word because all of that light illuminating those clouds and much of the rest is but egregiously wasted energy. LED light sources do hold promise for reducing this waste because they efficiently emit light in only one



direction. Lighting engineers will presumably want to direct LED light just where needed. This is a radically different concept from the ubiquitous sodium vapor city lighting that now bathes our streets, buildings, and clouds

in yellow. Whatever the source, if dark skies are desired, the fixtures should be "full cutoff." That is, no light should be emitted above the horizontal plane. This means that when the fixture is viewed horizontally from the side, the bulb and diffuser are not directly visible but cut off. The many benefits of full cutoff lighting are now recognized by designers of indoor environments whose ceilings are pocked with cans holding recessed bulbs and pin spots. Long ago they abandoned hanging bare light bulbs from ceilings but their outdoor counterparts still cling to the standing ones. Outdoors they still believe that an enclosed bare bulb without any reflector sitting up on top of a pole provides good illumination. Any passerby with posterior subcapsular lens opacities could tell them that the glare from these fixtures reduces their safety.

We ophthalmologists can conserve energy and help our outdoor environments by encouraging the use of full cutoff luminaires directing the light where needed and away from the sky and the eye. Your input concerning the fixtures selected for parking areas, schools and businesses may make a difference. Full cutoff reflectors provide the same surface illuminance with reduced wattage and less glare. No outdoor light should be without one.

Woman's Day

Three men were hiking through the forest when they came upon a large, rain-swollen, raging river. Needing to get to the other side, the first man prayed that he be given the strength to cross the river. Poof! He suddenly had big arms and strong legs and he was able to swim across in about two hours, having almost drowned twice.

After witnessing that, the second man prayed for strength and the right tools to cross the river. Poof! Suddenly a rowboat, strong arms and strong legs were given to him and he was able to get across the river in about an hour after almost capsizing twice.

Seeing what had happened to his two buddies, the third man prayed for the strength, tools and intelligence to cross the river. Poof! He was turned into a woman! She checked the map, hiked two hundred yards upstream and crossed the bridge.

Guys, if at first you don't succeed, do it the way your wife told you!

Diet

Yesterday I was at the pet store buying a large bag of dog chow for my loyal pet, Cassie. I was in the checkout line when the woman behind me asked if I had a dog. What did she think I had, an elephant?

On impulse I said, "No, I don't have a dog. I am starting the Dog Food Diet again." I added that probably I shouldn't because the last time I ended up in the hospital but that I had lost 50 pounds before I awakened in the intensive care unit with tubes coming out of every orifice and IVs in both arms. I told her that it was essentially a perfect diet, and that the way it works is to load your pockets with chow nuggets. Then



you simply eat one or two every time you feel hungry. The food is nutritionally complete so it works well, and I was going to try it again. -I have to mention here that practically everyone in line was now enthralled with my story.

Horrified, she asked if I ended up in the ICU because the dog food poisoned me. I told her, "No. I stepped off the curb to sniff an Irish Setter's butt and a car hit both of us." I thought the guy behind her was going to have a heart attack, he was laughing so hard.

The pet store won't let me shop there anymore. Better watch out what you ask retired people. They have all the time in the world to think of crazy things to say.

Sheer Genius

The following were in a GCSE examination in Swindon, Wiltshire (U.K.). The genuine answers are from 16 year olds.

Q. Name the four seasons.

A. Salt, pepper, mustard and vinegar.

Q. How is dew formed?

A. The sun shines down on the leaves and makes them perspire.

Q. What happens to your body when you age?

A. When you get old so do your bowels and you get intercontinental.

Q. What is a terminal illness?

A. When you get sick at the airport.

A little old lady was on a bench in the garden of The Villages, a retirement community in Florida. A man soon took a seat on the other end of the bench. After a few minutes the woman asked, "Are you a stranger here?" He replied, "I lived here years ago." "Where were you all these years?" "In prison," he said. "Why did they put you in prison?" Very quietly he said, "I killed my wife." "Oh!" said the woman..." So you are single...?"

Ketchup

A woman was trying very hard to open the Ketchup bottle. During her struggle the phone rang and she asked her four year old daughter to answer the phone. "Mommy can't come to the phone to talk to you now. She's hitting the bottle."

How the Fight Started

I asked my wife, "Where do you want to go for our anniversary?" It warmed my heart to see her face melt in sweet appreciation. "Somewhere I haven't been in a long, long time," she said. So I suggested, "How about the kitchen?"

And that's when the fight started...

The next day she decided to make a point to the effect that she really did do things around the house. As I drove into the driveway after work I found her sitting in the over-long grass in our front yard busily snipping away with a pair of sewing scissors. I watched silently for a minute and then went into the house. When I came out again, I handed her a toothbrush and said, "When you finish cutting the grass, you might as well sweep the driveway."

The doctor says I will walk again, but I will always have a limp.

NEWS

from the
Academy Foundation

MUSEUM OF VISION'S 30TH ANNIVERSARY

Founded in 1980, the Museum of Vision, an educational program of the Foundation of the American Academy of Ophthalmology (FAAO) has worked to preserve and promote ophthalmic heritage.

Four years ago, the Museum of Vision embarked upon an effort to create a unique Web site that would digitize its entire 38,000 piece collection. It was our hope that the Web site would help connect the past with the present through a host of interactive, state-of-the-art Web tools that bring every artifact and exhibit to life. That vision has now become a reality with the launching of www.museumofvision.org.

The new Museum of Vision web site includes the following features:

Timeline of historical events in ophthalmology

This feature, predominantly displayed on the home page, includes links to six separate timelines: glaucoma, cataract, retina, refraction and refractive surgery, general ophthalmology and one large comprehensive timeline that combines the other five.

Collection & Archives

Use the online search to peruse the entire Museum collection, including the AAO Archive, for a specific topic of interest. This feature includes keyword and date searches, advanced searches on all fields, and a community forum area where users can sign in to leave comments.

Research & Resources

This aspect of the new site contains information for teachers and downloadable curriculum guides. It also houses information on artifact identification, performing historical research, photographic services and information about image rights and reproduction.

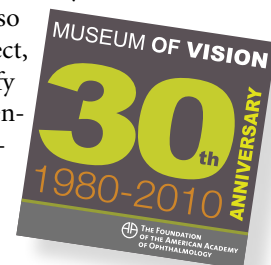
Exhibitions

The new Museum web site is now able to feature all of its exhibits, past and present including: Eyes of War—World War II from the point of view of ophthalmologists who participated in different

aspects of the war and Windows to the Soul—An examination of the ancient legends and folklore surrounding eyes and sight.

Biographies & Oral Histories

This section is made up of short biographical sketches and links to excerpts from the oral history program. This section also features the Legacy Project, a collaboration to identify families with multiple generations of ophthalmologists.



With the creation of this fully interactive web site, we have taken a tremendous leap forward in demonstrating the relevance of ophthalmic history and that of the Academy. Over time this will prove to be an invaluable resource for people to understand the important role ophthalmology has played in medicine and to inspire an appreciation of vision science, the profession and contributions made toward preventing blindness.

Preserving our heritage is an important part of what we do and we appreciate your continued support. To help us continue these endeavors, consider making a contribution to the Museum of Vision today. If you choose, you can donate online on the museum's web site, museumofvision.org.

All 2010 donors to the Museum of Vision are invited to a special reception at this year's Joint Meeting in Chicago on Saturday, October 16, from 3:00 p.m. to 4:00 p.m. in the McCormick Center at the museum's exhibit.

If you have any questions, feel free to contact Joanne Neuman at 415.447.0356 or jneuman@aa.org.



“Having been actively involved with the Museum for nearly 30 years as a committee member and now as the chair of the Museum Directors committee, I am thrilled to see such a worthwhile program come to life on the internet and showcase ophthalmic history as well as that of the Academy,” added Norman B. Medow, MD.

AS I REMEMBER IT

William Crampton, M.D.

In the late 1950s, the American Board of Ophthalmology oral exams were given only a few times each year. I had just passed the written exams when notice was published that the next orals would be in San Francisco. Even though I lived on the east coast, I felt the time was ripe to get the orals out of the way, so I flew to California. It was far from sunny, and was even cold climate-wise and exam-wise.

In those days the orals took three days of interviews with board examiners and evaluations of live patients. I was convinced that the examiners were “out to get you,” having heard awful tales from some who had recently taken their orals, and warnings like “don’t get Dr X for your surgery exam or Dr. Y for pathology.” Also, if an examiner chose to flunk you, a second examiner got a shot at you before the failure was final.

Actually, I found most of the examiners to be considerate. The gentleman who examined me in strabismus asked me a question

about the appropriate treatment of a certain type of vertical strabismus. Having just read an article about a “new and best” treatment for that condition, I chose to discuss this with the examiner. He asked, “Where on earth did you ever learn such nonsense?” When I told him about the article, he still felt it was wrong and instructed me to go to the library at UCSF and bring the journal to him. He then read the article, pronounced it “rubbish” and explained why he thought it was wrong.

On the final day, all examinees waited to hear their name called for having “passed.” There were a few whose names were not called, including mine. We were informed that we had failed one or more parts of the exam and would be reexamined. Soon the ophthalmologist who had examined me in strabismus called my name. Embarrassed, I approached him. He then put his arm around my shoulder and said, “I forgot to give you a grade. Tell me something about our time together to help me remember.” I told him of the discussion we had had about the journal article. He then said, “Oh! You did fine. I’m sorry to have worried you.”



SCOPE

Newsletter of the Academy Seniors

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