# News in Review

A LOOK AT TODAY'S IDEAS AND TRENDS

# The Doc Who Blinded Bach

istory has not been kind to John Taylor, the flamboyant 18th-century British oculist who raised self-promotion to a high art. Many of his contemporaries commonly saw Taylor (1703–

1772) as a bombastic quack who, critics believed, blinded Johann Sebastian Bach, George Frideric Handel and probably many others. Selfanointed as French royalty ("chevalier") and self-promoted as "Ophthalmiater, Pontifical, Imperial, and Royal," Taylor swept ostentatiously into public squares throughout Europe, conducting surgeries, promising cures—and then quickly leaving town.

Daniel M. Albert, MD,

EyeNet thanks Susan B. Bressler, MD, and Christopher J. Rapuano, MD, for their help with this issue's News in Review. who counts Taylor's autobiography among the thousands of ophthalmic works he has collected—and the many that he is now in the process of donating to his university's library—is pleased that there seems to be a trend among ophthalmic journals to put historic articles on the Internet. In fact, the British Medical *Journal* provides online access to articles going back to 1840. The archives include an important 1911 article about Taylor, titled "Some Notable Quacks."1 Dr. Albert, director of the University of Wisconsin Eye Research Institute and professor of ophthalmology and visual sciences, talked with *EyeNet* about Taylor's mixed contributions to the history of ophthalmology.

Dr. Albert sees Taylor as more than a quintessential quack. "In the mid-18th century, Taylor became the poster child for quacks, showing the worst of them," he said. "But I think the truth of the matter was he was a properly trained surgeon, by the standards of the time, and a very astute observer."

Before becoming an itinerant oculist, Taylor trained in London under William Cheselden, who was the first to describe iridectomy. "There is no doubt that [Taylor] had some skill as an operator, and he invented a cataract needle and other instruments," the 1911 *BMJ* article notes.

But Taylor's surgical skills were overshadowed by his choice of showmanship and self-aggrandizement over truth, Dr. Albert said. Historians learned that very little of what Taylor wrote about his ophthalmic travels



couching. The couching technique for treatment of cataract (shown above) was performed by John Taylor on Johann Sebastian Bach in 1750. The procedure led to inflammation and poor health, blindness and, not long afterward, the death of Bach.

and achievements could be accepted without corroboration.

Consequently, although Taylor claimed to have performed the first successful strabismus surgery while in Italy, no one believed this until the late 20th century, Dr. Albert said. "A copy of an article that he wrote in

Italian about the strabismus surgery was found in some obscure Italian library," he said. "And so Taylor really does deserve credit for being the first person to operate for crossed eyes with some modicum of success."

But did the Ophthalmiater really blind Bach and Handel?

Summarizing his reading of historical records, Dr. Albert said that Taylor apparently twice performed couching for cataracts on Bach's eyes in Leipzig in

1750. The second surgical bout led to inflammation, Bach's health collapsed and his vision never returned. He died several months later. Taylor operated on Handel in 1758 for blindness that many historians believe was caused years earlier by a stroke. "In both cases the surgery and the associated medical treatment probably did contribute to deterioration of vision and health. although more clearly so in Bach's case than in Handel's," Dr. Albert said.

And the same hands that harmed Bach also restored the vision of another creative force of the 18th century: Edward Gibbon, who began working on *The History of the Decline and Fall of the Roman Empire* after the surgery.

"Taylor was an astute practitioner, and he did some good things," Dr. Albert said. "His tragic problem would probably be diagnosed today as a severe personality disorder and might well be amenable to treatment." —Linda Roach

1 *Br Med J* 1911;1(2630):1264–1274. A free PDF is available to individuals who complete a short registration form: <a href="www.bmj.com/content/vol1/issue">www.bmj.com/content/vol1/issue</a> 2630/

FOR FURTHER READING: Wood, S. "A rare manuscript of Chevalier Taylor, the royal oculist, with notes on his life." *Br J Ophthalmol* 1930;14(5):193–223. A free PDF is available at: <a href="www.ncbi.nlm.nih.gov/pmc/articles/PMC511175/?tool=pubmed">www.ncbi.nlm.nih.gov/pmc/articles/PMC511175/?tool=pubmed</a>

#### Glaucoma News

## Uveolymphatic Outflow Pathway Discovered

ided by a variety of molecular tools and sophisticated imaging, Toronto researchers recently conducted a study showing that lymphatic circulation exists in the uveoscleral outflow pathway!— an unconventional pathway that appears to run through the interstitial spaces of the ciliary muscle into the suprachoroidal space and then the sclera.

For more than a century, the eye was thought to lack lymphatics, yet this theory failed to hold water. Primary functions of the lymphatics include the clearance of fluids, proteins and waste from tissues, in addition to immune surveillance. Certain unanswered questions suggested that lymphatics might be present, said study coauthor Neeru Gupta, MD, director of the glaucoma

unit and nerve protection unit at St. Michael's Hospital and professor of ophthalmology at the University of Toronto.

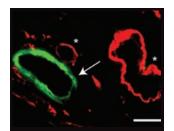
How, for example, did the eye maintain a clear and transparent aqueous humor and optical clarity despite being a metabolically active site? Or how could tracers injected into the eye get to lymph nodes? Questions like these prompted the pursuit of this study, as did the availability of lymphatic endothelial cell markers, such as the glycoprotein podoplanin and lymphatic vessel endothelial hyaluronan receptor-1 (LYVE-1).

Using these immunofluorescent markers along with confocal microscopy, the researchers, led by ophthalmic pathologist Yeni Yücel, MD, PhD, at the University of Toronto, identified lymphatic

channels in the ciliary bodies of 13 post-mortem human eyes—findings that were then confirmed using immunogold electron microscopy. Nanotechnology was then coupled with phosphorescent tracer studies in five sheep.

"We were able to see the lymphatic channels and to identify fluorescent nanospheres within their lumen," said Dr. Gupta. In addition to having a distinct lumen, the channels were not positive for blood vessel endothelial cell markers and were devoid of continuous collagen IV—positive basement membrane, which normally lines blood vessels.

The next step involved injecting radioactive human serum albumin into sheep eyes to confirm whether the channels were in fact functional. "We found a much higher concentration of radioactivity in the lymph nodes in the head and neck—close to the site of injection—compared with reference popliteal nodes," said Dr. Gupta, adding that plasma levels were monitored in addition to



**GO WITH THE FLOW.** Double labeling of human ciliary body section shows a D2-40-positive lymphatic channel (in green indicated with arrow) with a central lumen that is distinct from collagen IV–positive blood vessels (in red indicated with asterisk). Calibration bar indicates 10 μm.

lymph nodes to corroborate lymphatic drainage.

This discovery is exciting not only because it provides a novel target for maintaining the fragile fluid balance of the eye with glaucoma, said Dr. Gupta. It also has implications for other eye diseases. "And it provides an opportunity to understand the link between inflammation in the eye and the rest of the body," she added.

—Annie Stuart

1 Yücel, Y. H. et al. *Exp Eye Res* 2009:89:810–819.

#### **Ophthalmic Heritage**

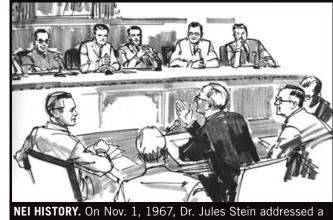
### **NEI History Book Published** on the Internet

t was only four decades ago that Congress gave vision researchers a home of their own within the National Institutes of Health. How the National Eve Institute came to be and the benefits it brought are the topics of a new history book written by two of the NEI's early leaders.

History of the National Eye Institute 1968–2000 traces the NEI's first 32 years, guided by the authors' recollections, government archives and interviews. It was released last October to mark NEI's 40th anniversary and can be downloaded (free) as a PDF at www.nei. nih.gov/neihistory.

NEI founding director Carl Kupfer, MD, and Edward McManus, executive officer and, later, deputy director at NEI, began working on the book in 2004, four years after they both retired. Historian Nancy K. Berlage, PhD, coauthor of Pentagon 9/11, an oralhistory narrative of the 2001 attack on the Pentagon, collaborated with Mr. Mc-Manus and Dr. Kupfer on the book.

Oral histories also were



House subcommittee to support the NEI's creation.

important in the NEI book. "Through the interviews, we had a pretty good picture of what happened, and we were also able to tell a more interesting story," Dr. Kupfer said.

The book also passes along tidbits worth preserving. One of them: NEI supporters worried that a blind witness in a House hearing

might yank out his artificial eves and throw them on the table. Another one: After Congress voted yes on NEI, President Lyndon Johnson threatened a veto. Hollywood movie mogul (and ophthalmologist) Jules Stein, MD, quickly flew across country to LBJ's ranch and saved the day.

—Linda Roach

#### Retina Report

### **Bevacizumab for Control** of Post-Phaco DME

esearchers have found yet another use for intravitreal bevacizumab (Avastin). Two studies, one from Spain,1 the other from Japan,<sup>2</sup> found that the VEGF inhibitor, given during cataract surgery, protected against an increase in macular edema commonly seen in diabetic patients following phacoemulsification. What's more, the control groups lost visual acuity and experienced significant increase in retinal thickness as mea-

sured by OCT imaging.

"The results were uniformly impressive," said Nancy M. Holekamp, MD, a partner at Barnes Retina Institute and professor of clinical ophthalmology at Washington University in St. Louis.

The prospective, randomized, masked trials involved 26 and 42 patients, respectively. A single intravitreal injection of bevacizumab was given following phacoemulsification and IOL implantation. Controls

received sham injection or balanced salt solution.

There were no adverse events in either study. For example, bevacizumab did not induce the rise in IOP associated with triamcinolone to prevent DME.

Questions remain, however. For instance, a doseranging study is needed to determine the ideal drug concentration, according to the Japanese researchers, who used 1.25 mg, the common dose in clinical practice. And both groups addressed concerns over long-term efficacy, noting that the recurrence rate remains unknown. The results, as measured by OCT, persisted at three months follow-up in one study and six months in the other.

Still, "the results were so

compelling in favor of the bevacizumab" that clinicians should feel comfortable offering it to DME patients undergoing cataract surgery, Dr. Holekamp said. She noted that bevacizumab has been given worldwide for a variety of retinal conditions with no significant safety concerns, and no complications were reported in either study. "At the present time there is no safety reason not to treat DME patients in this manner."

She cautioned, however, against extrapolating the results to offer treatment to other diabetic patients.

-Miriam Karmel

1 Lanzagorta-Aresti, A. et al. Retina 2009;29:530-535. 2 Takamuro, Y. et al. Ophthalmology 2009;116:1151-1157.