Although his name is commonly recognized in conjunction with various corneal and anterior segment disorders, Ernst Fuchs’ contribution to ophthalmology exceeds purely the delineation of ocular diseases and the detailed description of signs. Fuchs’ collection of microscopic samples laid the foundation for anatomical and pathological understanding of blood vessels, muscles, and most other tissues of the eye. Additionally, Fuchs was able to pass on his unique knowledge, educating ophthalmologists at an international level. His textbook was, for many decades, the most extensively used reference book in the field of ophthalmology worldwide.
skiing to Vienna.1 a pair of “snow-shoes,” as they were
dinavia in 1875, Fuchs brought back
to the globe. Following a trip to Scan-
dinavia on his many travels around
larly presented talks to a wide au-
den German society of Vienna, he regu-
larly gave talks to a wide au-
dence on his many travels around the
globe. Following a trip to Scan-
dinavia in 1875, Fuchs brought back
a pair of “snow-shoes,” as they were
called at the time, thus introducing
skiing to Vienna.1

PHYSICIAN AND RESEARCHER

Besides von Brücke, the 2 other ma-
jor influences in Fuchs’ profes-
sional life were von Arlt and Bill-
roth. At the instigation of von Arlt,
with whom Fuchs had already been
working as an unpaid intern for sev-
eral months, he started his formal
training in surgery. Billroth, whose
outstanding contributions as a sur-
geon were already recognized across
Europe, became Fuchs’ teacher and
tutor for the next 2 years. It was
during this time that important
changes in surgery took place, such
as the introduction of antisepsis by
Joseph Lister. However, the effects
of cocaine were still unknown. Al-
though Fuchs considered a career as
a general surgeon during this pe-
riod of his life, when his time with
Billroth was over, von Arlt offered
him a position as an assistant in his
clinic. Apparently regretting his de-
cision to decline the position with
Becker the previous year, Fuchs now
became von Arlt’s assistant and
followed a route back toward oph-
thalmology.1 It was the beginning
of a scientific and clinical career that
would make Fuchs an acknowl-
edged worldwide authority in the
newly defined specialist field of
ophthalmology. At this time, 3
ophthalmic schools had been estab-
lished in Vienna and were headed
by von Arlt, Carl Stellwag, and Edu-
ard von Jäger.

One should keep in mind that
Fuchs’ career in ophthalmology
started at a time when many sur-
geons still wet their cataract knife
with their lips to keep it moist and
able to slide. He was the first assis-
tant in Vienna to give his medical
lectures in both German and En-

Figure 1. Portrait of Ernst Fuchs. Original etching by Emil Orlik, 1910. Reprinted with permission from the Institut für Geschichte der Medizin, Vienna, Austria, copyright 1910.

Figure 2

Chronology of the Life of Ernst Fuchs

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1851</td>
<td>Born on June 14 in Vienna, Austria.</td>
</tr>
<tr>
<td>1860-1868</td>
<td>Attends Scott’s Gymnasium in Vienna.</td>
</tr>
<tr>
<td>1868</td>
<td>Begins medical study in Vienna.</td>
</tr>
<tr>
<td>1873</td>
<td>Assistant at the Physiological Institute in Innsbruck, Austria.</td>
</tr>
<tr>
<td>1874</td>
<td>Receives Doktor Universae Medicinae.</td>
</tr>
<tr>
<td>1875-1881</td>
<td>Assistant ophthalmologist in von Arlt’s clinic in Vienna.</td>
</tr>
</tbody>
</table>
| 1881-1885| Appointment as professor of ophthalmology in Lüttich, Belgium; publica-
|          | tion of first textbook on the causes of blindness.                    |
| 1885-1915| Return to Vienna and appointment as clinical director of the Second Vi-
|          | ena Eye Hospital.                                                      |
| 1930     | Dies on November 21 in Kritzendorf, Austria.                          |

At the time, education in ophthal-
mology was still dictated by the “rig-
orous-order”1(p320) of providing
knowledge about diseases of the
outer eye and some standard surgi-
cal techniques. Although the ante-
rior eye was also the main focus in
Fuchs’ undergraduate teaching, he
paid great attention to visual dys-
function and ophthalmoscopic stud-
ies in his clinic and private prac-
tice. His other areas of interest
included dermatology, nervous dis-
ases, and the sinuses. Fuchs con-
sidered attention to detail in mak-
ing a diagnosis of the highest
importance in teaching. Salzmann3
commented that it was entirely
against Fuchs’ nature to tutor any-
thing ex kathedra, without being en-
tirely sure of its correctness.

Fuchs’ Textbook of Ophthalmol-
ogy was first published in 1889. Dur-
ing the following 21 years, he ed-
ted 12 of the 18 German editions of
the textbook himself. By compari-
son with other textbooks at this time,
the scientific importance of his book
is clearly shown. Fuchs empha-
sized that the publication of his text-
book earned him more fame and re-
spect than the combination of all his
other published articles. The Text-
book of Ophthalmology was trans-
lated into numerous languages (in-
cluding Japanese, Chinese, Spanish,
French, Russian, and Italian). Be-
tween 1892 and 1933, 10 British and
American editions were published.
Later versions were edited by Salz-
mann,3 his oldest pupil. In America
as well as the Far East, the text-
book was considered the bible of
ophthalmology for approximately 50
years. The final edition was pub-
Ernst Fuchs became well known for his ability to support the diseased eye.1 Especially fascinated by intraocular tumors, he published a major monograph on the topic at the beginning of his scientific career. By the end of his life, Fuchs’ collection of microscopic specimens was the largest of its kind.

The importance of Fuchs’ life achievement must surely be based on his discovery and description of numerous ocular diseases and abnormalities. As a result of more than 250 scientific publications,2 the name Ernst Fuchs became well known throughout the world, elevating his clinic into a meeting point for ophthalmologists worldwide. Many examples of the discovery of important ocular signs of new diseases and syndromes, or previously unknown sequelae, are based on Fuchs’ research. One particular example is a corneal abnormality called dystrophia epithelialis cornaeae (Fuchs epithelial dystrophy). Studying the inflamed cornea, Fuchs described keratitis disciformis (although the symptoms were already known, it was Fuchs who described the pathological features of the disease in detail), keratitis pustuliformis profunda, and keratitis punctata superficialis. Beyond corneal disease, Fuchs also described abnormalities affecting the lids, uvea, and retina; for example, blepharochalasis, ptosis myotropica, Fuchs heterochromic cyclitis (Fuchs uveitis syndrome), Fuchs coloboma, Foster-Fuchs spot in myopia, gyrate atrophy of the choroids, and retinitis circinata. For the first time, he differentiated clearly between endophthalmitis and ophthalmia sympathetic. Also for the first time, Fuchs reported choroidal detachment following cataract surgery.3 In one of his first works, Fuchs showed the possible resolution of the star-shaped traumatic posterior cortical cataract in episcleritis periodica fugax.

Other special interests included congenital abnormalities in movements of the eyelids as well as insertion of the extraocular muscles. Numerous publications were dedicated to the assessment of the blood and lymphatic vessels of the eyelids, iris, and lamina cribrosa. Subjects of other publications included the study of chalazion, pinguecula, pterygium, retinal degeneration, “ulcers” of the pars ciliaris retinae, and many more. By making use of his large collection of histologic specimens (more than 40000), Fuchs became particularly well known for his ability to support any clinical work with pathological-anatomical findings. During his years as assistant, the precocious Fuchs wrote an extensive monograph on the “sarcoma” of the uveal tract.4 He discovered the diffuse form of the sarcoma, studied the necrosis of the ulcer and its symptoms, and identified its unusual form of sympathetic inflammation. Particular attention leading to voluminous publications was focused on inflammation of the uveal tract and its different forms. There is a long list of special interests that became a lifelong focus for Fuchs’ scientific work, including several neuro-ophthalmological conditions.

Even if Fuchs’ surgical innovations did not reach the same degree of importance as his clinical research, his studied attention to detail in this field was certainly groundbreaking for its time. As a teacher, he was aware of the fact that surgery can be taught only as a hands-on experience rather than solely through textbooks. Two important works that evolved from Fuchs’ school of surgical technique were Die Augenärztlichen Operationen by Czermak and Ophthalmic Surgery by Meller.5

In 1915, at age 64 years, Fuchs resigned as clinical director of the Second Vienna Eye Hospital. Apparently, the main motive for his relatively early retirement was escape from the time-consuming obligations of teaching and examining. Nevertheless, following his retirement as a physician and lecturer, he published a further 99 articles, most of them based on his unique collection of pathological-histological specimens.

INTERNATIONAL RECOGNITION

Ernst Fuchs was an honorary member in 39 scientific societies, was President of Honor of the Ophthalmological Society of Madrid (Madrid, Spain), and held numerous honorary doctorates.3 In 1902 he delivered the Bowman Lecture in London, England, at the Ophthalmological Society of the United Kingdom. In 1911, during the first of Fuchs’ 3 journeys to the United States, he gave the Lane Lectures in San Francisco, Calif, and read a paper there to the American Ophthalmological Society. On his second journey, from 1921 to 1922, he completed a coast-to-coast lecture tour on the pathological characteristics of the eye (see Figure 3).6

Figure 2. Portrait of the younger Ernst Fuchs. Photograph by J. Löwy, circa 1885. Reprinted with permission from the Institut für Geschichte der Medizin, Vienna, Austria, copyright circa 1885.
Thanks to numerous invitations by international colleagues, scientific societies, and governments, Fuchs was able to escape the Austrian winters (of which he had a growing dislike with age) by speaking in countries as far away as Indonesia and East Africa. Remarkably, besides some knowledge of Latin and Greek, Fuchs was fluent in English, French, and Italian. To present his work in Spain and South America, he also began to learn Spanish at age 70 years and subsequently produced several publications in that language.

Fuchs' worldwide reputation was particularly recognized when a special banquet was held in his honor by the American delegation at the Amsterdam International Ophthalmological Congress (Amsterdam, the Netherlands) in 1929. At the close of the congress, the International Association for the Prevention of Blindness was established, to which he was elected the first honorary member. He was also honored with the Leslie Dana Medal of the Missouri Association for the Blind, the first time this medal was awarded outside the United States. From the Netherlands, he traveled to Canada and then to Baltimore, Md, where he was invited as guest speaker for the opening of the Wilmer Ophthalmic Institute. During this journey, his third to the United States, he was made an honorary member of the New York Academy of Medicine (New York, NY). Fuchs continued his journey through Mexico and Central America. Only a few months after his return to Vienna and following an outstanding, dynamic career, Ernst Fuchs died on November 21, 1930, at age 79 years. He was buried in Kritzendorf, a small Austrian village on the Donau River.

During the funeral obsequies held by the Austrian Ophthalmological Society (Vienna), of which he had been President of Honor, Fuchs was described as a serious teacher and physician but never dogmatic. He was also described as being aware of the relativity and limits of scientific knowledge, especially in medicine. As part of the introduction of the 10th edition of his textbook, Fuchs wrote,

"[N]othing shows me the speed of scientific progress better than to leaf through the first editions of my book. I come across opinions that I shared with other experts and that now seem to have aged half a century. I would prefer not to admit to these opinions, would the proof not lie in front of me."

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