

JEWISH EYES

Sir William Osler once wrote that “In the medical profession the Jews had a long and honorable record and among no people is all that is best in our science more warmly appreciated.” In no field has that phenomenon been more noteworthy than with the specialty of ophthalmology. Indeed, in the pantheon of famous Jewish physicians, eye specialists have had pride of place - one even might say that “the eyes have it.”

The Ancients

Disorders of the eye were of great concern to the sages and the Bible and Talmud are replete with references. In 1914 when Dr. Julius Preuss published his classic text *Biblical and Talmudic Medicine*, he devoted 26 pages to eye diseases and their treatment. Moreover, in 1922 when ophthalmologist and historian Harry Friedenwald published his long essay *Ophthalmologic Notes of Jewish Interest*, he described dozens of exemplary predecessors.

In religious texts the causes of blindness sometimes included transgressions by the affected which resulted in Divine punishment. At other times blindness was alluded to in a metaphorical sense and for the superstitious (almost everyone in ancient times) the “evil eye” was a real and sinister everyday presence. To be sure, eye diseases were endemic in the Orient and in most impoverished areas where Jews lived, and some early observers recognized that environmental factors might be at work, especially poor hygiene. Consider this practical but disturbing Talmudic wisdom, “The hand which without having been washed touches the eye deserves to be cut off for it causes blindness.”

Mar Samuel was a multi-talented Babylonian Talmudist (c. 180-c.254 CE) – a revered judge of the religious court, an expert astronomer and also a skilled physician. He was well-known for his expertise in treating eye diseases and often prescribed a collyrium paste for eye disorders, the ingredients of which no longer are known. Mar Samuel once acknowledged that “a drop of cold water in the morning and bathing the hands and feet

in hot water in the evening is better than all the eye salves in the world” and consistent with this emphasis on hygiene, he asserted that “untidiness [neglect] of the head leads to blindness.”

Less plausible causes of defective vision cited in the Talmud included combing one’s head when it is dry, drinking the drip-drop of wine from the barrel, and putting on shoes while the feet are still damp (*Pesachim* 111b). Elsewhere the Talmud declared that the eyes of anyone who looks at three things become dim: staring at the rainbow, at the regent, and at the priests during the benediction. Why? Because the Divine Majesty is mirrored in all three (*Chagigah* 16a). Among popular remedies for eye disorders were human milk, wine or honey – this last only if consumed before meals because if taken after meals honey has the opposite effect. More odious, but reportedly equally effective was the liberal use of spittle from a fasting person!

Mar Samuel served for a while as Rabbi Judan HaNasi’s personal physician and there is a legend that when the *rebbe* developed an eye disease, Samuel said, “I will fill the eye with *samma* [powder].” Rabbi Judah answered, “I cannot bear it.” “Then I will apply an ointment to it.” “This too I cannot bear.” So Mar Samuel placed a phial of chemicals under his pillow and Rabbi Judah was healed. Raschi explained that “the strong power of *sam*’s fumes had traversed the skull and the brain up to the eyes.” The more skeptical early 20th century physician Julius Preuss suggested that closer to the truth was cure by the power of suggestion.

Isaac Israeli was one of the leading physicians during the Arabic dominance in the Middle East. Among the Arabs he was known simply as *Israili*. Born in Egypt sometime before 850 CE, some sources suggest that he lived to one hundred years. As one Arab scholar wrote of him, “He lived over one hundred years, never married and did not seek wealth. He composed valuable works...which cannot be weighed with gold and silver.” Once when asked whether he regretted not having children to live after him, Isaac replied, “I shall leave my book on fever as my posterity.” Isaac Israeli was Egypt’s most famous oculist, renowned for his observations on ophthalmia and trachoma. His books

were written in Arabic, but translated into Hebrew and Latin and during the Middle Ages he was considered equal in rank to Hippocrates, Galen and Rhazes. Of greatest interest to modern physicians are his numerous medical aphorisms of which I'll cite only a few:

-Most illnesses are cured without the physician's help through the aid of nature.

-Do not rely on cure-alls, for they depend mostly on ignorance and superstition.

-Try to ease the mind of the patient, encourage him to look forward to being cured, even if thou art not thyself convinced of it, for this will greatly strengthen his nature.

-Suffer not thy mouth to condemn when something happens to a physician, for everyone has his evil day. Let thy deeds praise thee and seek not thine honor in another's shame.

-Fix the fee of thy patient when the disease is in its ascendancy and most severe, for as soon as he is cured he will forget what service thou has rendered.

During the 12th century Maimonides wrote some 1,500 medical aphorisms, many of which concerned the eyes. One declared, "The eye is the most sensitive of organs. Therefore, drip medications into it extremely gently after slightly raising the upper eyelid. Dissolve the medications in liquids (such as egg albumin) whose nature is non-irritating." In another aphorism Maimonides wrote that the waters which accumulate in the eye produce what physicians call "tension" which accumulate between the crystalline lens and the cornea. But even the great scholar, who once was described as "the eagle of physicians," sometimes was way off base. For example, in one aphorism he remarked, "A person who has never seen ophthalmia [before,] when he [does] see a case will have his eyes become filled with fluid. If he continues to gaze upon it, he himself will be affected with ophthalmia." Apparently, Maimonides believed this phenomenon to be due not to contagion but to sympathy for as he explained, [It is the same as when] a person sees another making water, defecating, yawning, stretching – such awaken within him the desire to do the same." Of course, Maimonides lived some seven centuries before the germ theory was proposed.

In his historical review Harry Friedenwald described how many of the early Jewish eye specialists learned their skills from Arab doctors who were experts in the field. In turn, these Jewish doctors brought the best of Arabic medicine into Europe – but with mixed results. For example, in the 14th century King John of Bohemia had a Jewish oculist from France treat him for his visual impairment. Because the doctor was unsuccessful the King had him tied up in a bag and thrown into the river – an extreme form of baptism! About a century later a different King John, this one of Aragon, also employed a Jewish oculist with better luck. The doctor successfully operated on both eyes for cataracts and the grateful King was completely cured of his blindness. We prefer to think that this surgeon was compensated more favorably than his predecessor.

19th Century Europe

After Emancipation in the early 19th century, although young European Jews flocked in large numbers into science and medicine, progress within the academic establishment was grudging and the enthusiastic students found themselves marginalized and gravitated to less prestigious specialties such as dermatology-syphillology, neurology and (sorry to report to some readers) ophthalmology. Accordingly, Jews chaired eye departments in leading German and Austrian universities as well as in Hungary, France and even Russia. Jewish physicians founded eye hospitals, wrote atlases of ophthalmoscopy and described the actions of atropine and strychnine on the pupil.

Since general surgery was off limits, an easier track was eye surgery which chosen by a young Austrian Carl Koller who was a good friend of Sigmund Freud. At the time Freud was intrigued by the medical potential of cocaine which he viewed as a panacea for a range of ills. Freud asked Dr. Koller to help him test cocaine by chewing on it and then seeing if it enhanced his muscle strength. But Koller was more interested in eyes than muscles and when he noted that the drug numbed the mucus membranes of his tongue and lips, wondered if similarly it might provide local anesthesia before cataract surgery. Indeed it could and his discovery caused an immediate sensation, perhaps to the annoyance of his friend Freud who had high hopes that cocaine would gain him fame

and fortune. In 1885 Freud gave his friend the nickname “Coca-Koller.” This preceded the introduction of a cocaine-based soft drink on the American market by one year. Although Dr. Koller’s discovery made him famous, a university appointment still was out of the question. After he survived a duel over an anti-Semitic remark made by a gentile physician, Freud advised his friend to leave Vienna and “go confidently to America.” And so “Coca-Koller” immigrated to the land of Coca Cola.

More about Dr. Koller shortly, but elsewhere in Europe several other Jewish eye specialists were making their mark in non-medical fields. One of these Max Mandelstamm (1839-1912) was born in Lithuania to enlightened parents. He had gone to a Russian high school before entering medical school in Estonia and later studied ophthalmology in Kiev where he would join the local medical faculty. Three times his colleagues elected him to the rank of associate professor, but each time he was rejected because of his religion. After the pogroms of 1881, he embraced Zionism and became a close friend and associate of Theodore Herzl.

Ludwig Zamenhof of Bialystok studied medicine in Russia and Poland during the early 1880s and, like Mandelstamm and other Jewish physicians such as Max Nordau and Leo Pinsker, he was a protozionist. Zamenhof practiced briefly as a generalist in a small town but wasn’t a good businessman and gave away more money to his poor patients than he kept. So Zamenhof moved to Warsaw where he trained to be an oculist. Again his heart wasn’t in it but, fortunately, he’d married a wealthy woman who encouraged his true interest which was in world affairs. In one of his early Zionist pamphlets, Dr. Zamenhof proposed Mississippi as a more suitable homeland for the Jews than Palestine (you may recall that Herzl had suggested Uganda.) But Ludwig Zamenhof became disenchanted with Zionism which he thought would be unrealizable and gradually came to view his mission as not to encourage Jewish preservation so much as to be a force to unite all humanity. Toward this end, he developed the universal language which he called “Esperanto.” It attracted many thousands of idealistic followers and by the time he died in 1917, there were nearly 2,000 Esperanto societies throughout the world.

Robert Remak (1815-1865) grew up in a Polish ghetto, the son of a cigar store owner and lottery agent. His family was descended from kabbalistic Rabbi Moses Cordovero and their surname was derived from the famous rabbi's Hebrew initials (ReMaK.) With new opportunities for education in mid-19th century Europe, he pursued medical studies in Berlin where he worked in the research laboratory of the great anatomist Johannes Muller as well as the Jewish ophthalmologist Jules Hirschberg. In his short but productive career, Dr. Remak became enmeshed in dramatic new developments in German science and politics. In 1836 he described the filaments arising from nerve cells which later were named after Purkinje. In 1841 he was the first to report how new cells are formed by division of old cells – subsequently acknowledged by Virchow himself. Another of his early papers anticipated what much later would become known as the autonomic nervous system. In 1851 while working as assistant to the celebrated Albrecht von Graefe, Remak reported on the use of one of the first ophthalmoscopes. His many scientific contributions were widely recognized and under normal circumstances he would have advanced up the academic ladder. But despite liberalizing trends, no unbaptized German Jews were permitted to become full professors. In a direct appeal to the Prussian King Frederick Wilhem IV, Remak emphasized the commonality between German Christians and Jews and explained his obligation, as he put it, “to endeavor to help in advancing the community given [to him] by nature, instead of entering a new community.” Dr. Remak's impassioned appeal notwithstanding, it was rejected but thanks to the intervention by the esteemed Baron von Humboldt, he was granted a lesser academic position.

Robert Remak's son Ernest (1849-1911) like his father made a number of singular contributions for which others received medical immortality. For example, he described the extensor plantar response three years before Babinski's celebrated paper (1896) and he may have been the first to describe the wrist drop of lead poisoning that history has attributed to his teacher Wilhelm Erb. Relative to eye disease, E.J. Remak reported the pupillary signs of tabes dorsalis several years before Argyll Robertson's famous work.

American Luminaries

During the late 19th century as America became a center of Jewry, many emigres came to this country to take advantage of its greater opportunities. Conversely, native-born medical students travelled to European centers to perfect their skills so that there was two-way medical traffic across the Atlantic. Yet, one of the first Jewish ophthalmologists, not only was born here but did his medical training in his hometown of Philadelphia. Isaac Hays (1796-1879), the son of a wealthy Sephardic merchant obtained his medical degree from the University of Pennsylvania in 1820 where one of his teachers was the surgeon Philip Syng Physick who sometimes has been referred to as “the father of American Surgery.” Isaac Hays began his career as a general practitioner but soon became interested in eye diseases and was one of the first to specialize in that field. He joined the Wills Eye Hospital in 1834 and devised a “needle knife” that was used to extract cataracts. He may have been the first in this county to prescribe glasses for correction of astigmatism. Not only was Dr. Hays a pioneer ophthalmologist, he was one of the medical leaders of his time. A prolific writer, he also was editor of the *American Journal of Medical Sciences* which was widely known as “Hays’ Journal” and acknowledged by Osler to be one of the few great medical journals in the world.

What’s especially intriguing about Dr. Hays is that he was the main architect of the first code of ethics of the American Medical Association. Even before entering medical school he had apprenticed to Dr. Nathaniel Chapman who later would become the AMA’s first President. At a boisterous organizational meeting in 1846, it was Hays who promoted the notion that scientific medicine was a moral enterprise more than a business. He proposed six motions, all of which unanimously passed, including a resolution that, “it is expedient that the Medical Profession in the United States be governed by the same code of Medical Ethics.” Although Isaac Hays was the prime mover, a colleague recalled his “diffidence and reluctance to take center stage.” One modern historian has suggested that as a practicing Jew in gentile America, Hays feared provoking an anti-Semitic backlash and chose to downplay his own role. Dr. Hays became the first Treasurer of the AMA and held high offices in other medical organizations. When he died in 1879, he was recalled as “a gentleman of the old

school...esteemed throughout the United States and Europe for his labors to advance the science of the medical profession.” His son Minis Hays followed in his father’s footsteps and became a well known eye specialist and author.

Emil Gruening (1843-1914) emigrated from Prussia in the mid-19th century and soon afterward joined the Union Army. After the Civil War ended he returned to Europe to complete his medical studies under both von Graef and Helmholtz. A short but powerfully built man, when Gruening performed eye surgery a nurse had to hold his beard out of the way. Mount Sinai, “the Jews Hospital” had opened in New York in 1852 and in 1880 established an Eye, Ear and Throat Department which was headed by Dr. Gruening. In 1888, the aforementioned Dr. Carl Koller joined the staff as a consultant and promoted the idea that “the condition of the eye should be considered in relation to the condition of the body as a whole.” When Gruening retired and the Eye Department was split off from ENT, Drs. Koller and Charles May took over the leadership. In 1900 Dr. May published a manual of diseases of the eye which by the time of his death in 1943 had gone through eighteen editions and was widely translated.

New York and Philadelphia were not the only places where Jewish doctors flourished. Dr. Simon Pollak (1814-1903), one of eleven children of a successful Bohemian merchant, as a young man studied Hebrew and Greek. He also read and knew by heart the history of the United States and was determined to immigrate there for, as he later recalled, “The United States of America was where the fatherhood of God, the brotherhood of man and the entire quality of political rights prevailed. It was my land of choice.” Pollak had a private tutor and was able to enter the university’s department of medicine at age sixteen, but didn’t earn his medical degree in Prague until 1835. The next year he got his Doctor of Surgery & Obstetrics degree in Vienna and then in 1836 he sailed for New York. He briefly practiced general medicine there and then in New Orleans and Nashville before settling permanently in St. Louis where he specialized in eye diseases. He organized the first school for blind children west of the Mississippi and in 1856 was one of twelve founders of the Academy of Science of St.Louis. Dr. Pollak championed the cause of women physicians vouching for their moral character at a time

when women who entered the profession were considered to be of ill repute. During the Civil War, as a member of the U.S. Sanitary Commission he supervised conditions in hospitals, barracks and prisons. On a sour note, Dr. Pollak renounced his heritage and became a devout Catholic. Whether he did this out of conviction or ambition is unclear. Presumably it was the former but the fact was that in order to get ahead professionally and socially many Jews, both in Europe and here, felt obliged to convert.

Charles Lieberman (1813-1886), born in Riga, Latvia, was a political agitator against the Russian government as a student and was arrested several times. In 1888, having just received his medical degree in Berlin, he planned a trip throughout Europe, but in Hamburg saw an American Clipper ship which was about to sail for Boston. This appealed to his adventurous spirit and, impulsively, he changed plans and embarked for the United States. When Lieberman arrived the country was in the midst of a Presidential campaign which so impressed the young idealist that he decided to stay on. Undeterred by the fact that he knew no English, he settled in Washington, DC and soon put his surgical skills to good use. As a medical student Lieberman had observed the first surgical repair of strabismus and when given the opportunity he was the first to perform the procedure in America. He advertised in the local newspapers that he was ready at all times "to advise or practice either medicine, surgery or midwifery for the poor at no charge, not excluding life-threatening operations." As a result, he became a great success despite his foreign manners. Dr. Lieberman had a dim view of local medical education and in his blunt way extolled the German system. He became one of the dominant figures in planning what would become Georgetown Medical School and had a rather turbulent career in local medical politics. He became recognized as one of the area's foremost eye surgeons and when Abraham Lincoln was shot and lay dying, Dr. Lieberman was one of the medical dignitaries in attendance at his bedside.

Dr. Aaron Friedenwald's immigrant father came to Baltimore in 1832 and at first made a living as an umbrella repairman. His first-born son was born in 1836 and as a young student expressed an interest in pursuing a medical career. His mother warned, "You will not make the salt for your bread." However, he persevered and after receiving his

medical degree went abroad to pursue post-graduate work. In a letter home he wrote, “I commenced [studying diseases of the eye] under the renowned von Graefe in Berlin... Partly from the fact that this branch has been little cultivated in our country, and partly from its being my favorite study, I should like, if possible, to make it my specialty at some future day.” On his return to Baltimore in 1862, Aaron Friedenwald opened an office in his father’s home and was the only “eye doctor” in the city. (In fact, he wasn’t the first Baltimore ophthalmologist; a Dr. Julius Cohen (1801-1870) had that distinction having opened an eye and ear clinic as early as 1840. Indeed the Willis Hospital for the blind and indigent opened its doors in 1833.) When a chair of Diseases of the Eye and Ear was established in 1873 at the new College of Physicians and Surgeons of Baltimore, Aaron was elected to Professorship which he occupied until his death in 1902. Aaron Friedenwald was a leader not only in local and national medical organizations but in Jewish communal affairs as well. Among a myriad of activities, he also began collecting early medical manuscripts and books which, as we shall see, would have a profound effect upon his son.

Harry Friedenwald (1864-1950) followed in his father’s footsteps in more ways than one. After earning his medical degree from Johns Hopkins in 1884, he went abroad to study in Berlin under the famous Jewish eye surgeon Julius Hirschberg (1843-1925) who had studied with Virchow and Helmholtz and was first assistant to von Graefe. Professor Hirschberg’s original contributions to the medical literature exceeded three hundred articles and books and he edited the most influential ophthalmology journal of his time. Among many innovations he devised a giant electromagnet in order to extract metallic foreign bodies. His magnum opus was a ten volume History of Ophthalmology which appeared between 1899 and 1918. In order to collect material for this colossal work, he visited universities and archives all over the world. It was Professor Hirschberg who impressed young Harry Friedenwald with the importance of learning medical history in order to better understand the present. In later years, Harry compared Hirschberg with men like Winston Churchill who both made history and wrote about it with elegance of expression.

When Harry Friedenwald returned to Baltimore his interest in medical history was inspired further by working with Drs. William Osler and William Welch and in 1896 he joined their new “book and journal club.” Osler became president and young Friedenwald was made secretary. In fact, three years earlier Harry had been in the audience when his father delivered a speech at Graetz College in Philadelphia on “The History of Jewish Physicians and The Contributions of the Jews to the Science of Medicine.” On that day, Harry decided to pursue his father’s passion for Jewish medical history and book collecting and forty-seven years later, at Johns Hopkins he lectured on the very same subject that his father had. The next year (1944) his two volume collection of essays, *The Jews and Medicine* appeared which to this day is the classic reference work in the field.

Harry Friedenwald was an enthusiastic Zionist and in 1911 brought his family to Palestine for his son Jonas’s bar mitzvah. They visited medical facilities and fell in love with the land. Two years later, with Judah Magnes and Chaim Weitzmann, Harry discussed the idea of building a “Hebrew University” in Jerusalem and he agreed to support the project in the United States. He also was a dedicated advisor to Hadassah whose leader was his life-long friend Henrietta Szold. Growing up in Baltimore, the Friedenwald’s had five boys, the Szolds five daughters. After his first visit to Palestine Harry suggested to Henrietta that it would be helpful if trained American nurses could be sent to Jerusalem and recommended also that a lying-in hospital should be established there by Hadassah. In 1914 Harry Friedenwald spent two months as a one-man traveling eye clinic treating thousands of cases of trachoma in the agricultural settlements of Palestine. In 1918 he was present at the cornerstone laying of Hebrew University on Mount Scopus and later he served as chairman of the Zionist Committee in Palestine. Harry’s son Jonas (1897-1955) also became a well known ophthalmologist as well as a strong supporter of Hebrew University. Upon Harry’s death in 1950, the combined collections of Aaron and Harry Friedenwald, comprising more than 3,000 items, was donated to the National Library. It is the finest collection of its kind in the world. In 1957 an endowed medical faculty chair of the history of medicine was

dedicated in Harry Friedenwald's name at Hebrew University – the only such academic chair in the world.

Palestine

One of the eye specialists whom Harry Friedenwald visited in Jerusalem was Abraham Ticho (1883-1960.) Dr. Ticho was an observant Jew from Moravia (Austro-Hungary) who during his post-graduate studies in Prague and Vienna took an interest in eye disorders that were especially prevalent in the Mid-East. After completing his internship in 1912, he accepted an offer from a German Zionist organization to head a clinic in Jerusalem. His goal was to eradicate trachoma which was endemic and in the first year alone, 70,000 patients of all social, ethnic and religious backgrounds came to his clinic in *Mea She'arim*. Soon he was followed to Palestine by his cousin Anna, an art student, and they married that same year. During World War I, Dr. Ticho served as chief military physician in the Turkish army and for his work in Lebanon and Syria was awarded the medal of honor. Under the British mandate he headed the eye department of the Rothschild-Hadassah Hospital and also directed his own eye clinic (*Lema'an Zion*.) Every day hundreds of Jews and Arabs, rich and poor, would come, sometimes by donkey or camel, to be seen by the famous doctor. Among the Arabs, the name "Ticho" became synonymous with eye specialist. In 1956 a group of captured Egyptian army doctors were asked whether there was anything they wished to see in Israel before being returned home? They replied that they wished to meet Dr. Ticho and they were granted their request. Dr. Ticho's wife Anna became a famous artist and late in life was awarded the prestigious Israel Prize. He was a great collector of Hannukah candelabra and today both his collection and her paintings are displayed in their former home/clinic which after Anna's death was bequeathed to the people of Jerusalem as a public center for art and culture. (Ticho House now is run by The Israel Museum.)

One of Dr. Ticho's colleagues Ariel Feigenbaum was born in Lemberg in 1885. He received his medical degree in Vienna and then assisted Professor Hirschberg in Berlin for two years before moving to Palestine in 1913. Dr. Feigenbaum was arrested by the Turks in 1917, escaped to Damascus but was unable to return until 1919 when the city

was freed by General Allenby. Like Dr. Ticho he ran his own eye clinic and then joined Hadassah's country-wide campaign to eradicate trachoma which essentially was achieved in 1930. Dr. Feigenbaum became head of Hadassah Hospital's first Eye Department and in 1927 published the first Hebrew textbook of ophthalmology. During the first part of the 20th century America and Palestine weren't the only places to benefit from the Jewish brain drain from Europe. Many ophthalmologists immigrated to England and among the earliest were the German designer of ophthalmoscopes Richard Liebrich (1830-1917) who in 1863 wrote the first atlas on ophthalmoscopy and Joseph Dallos (1905-1979) of Budapest, the inventor of the modern contact lens.

Conclusion

From this brief account, it's evident that although Jewish physicians excelled in all fields of medicine, their contributions in ophthalmology were worthy of special notice. As the Israeli medical historian Solomon Muntner noted, "The student who confines himself to a knowledge of discoveries and achievements of his time will remain static in his outlook, whereas the one who constantly refers to the work and attainments of a long line of preceptors who lived before him, will develop a dynamic approach to his work...It may well be said, "Learn history in order to learn from history."