

GIRAUD-TEULON AND BINOCULAR OPHTHALMOSCOPY

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In his treatise on Optics, **HELMHOLTZ** wrote that **MERY** was the first in Paris at the beginning of the XVIIIth century to observe the fundus of a cat which he had immersed in water, and that **LA HIRE** was the first to give an exact explanation of the phenomenon.

In July 1852, the first results of the ophthalmoscopic examination were published in Paris by **FOLLIN**; his pupil, **MARESSAL de MARCILLY**, was the first to call this device 'ophthalmoscope' in his thesis (1852).

In 1861, **GIRAUD-TEULON** invented the binocular ophthalmoscope, defined its optical laws and made the first apparatus with **NACHET**.

We would like to tell you of the life of this exceptional man who is rather unknown by most ophthalmologists. His official biography was published by **WARLOMONT** in the *Annales d'Oculistique* and by **HIRSCHBERG** in his *History*. We have only one photograph showing GIRAUD-TEULON when he was old.

We have made numerous researches in France, in the city where he was born and in the cities where he lived, after many difficulties, we found unpublished documents in his great grandmother's home.

The life of **GIRAUD-TEULON** and of his family is closely associated with the history of France and of numerous foreign countries, United States included.

We have found many unpublished papers, written by the ophthalmologist and his son, where numerous accounts of the life of GIRAUD-TEULON and of his family are reported.

Marc-Antoine GIRAUD was born in La Rochelle on May 30, 1816, of a great protestant family; his father, a wealthy landlord, was republican and liberal. His paternal grand-father, GIRAUD, a barrister and deputy, had close relationships with America. Sent to Haiti and to the United States during the French Revolution, he was consul of France in Boston for 25 years and he died in Kentucky.

Jefferson was one of his friends. He was the brother-in-law of a famous writer, **CHODERLOS DE LACLOS**, and of Admiral **DUPERRE** who was Minister of Naval Affairs. His maternal grand-father, Dr. **CASIMIR**, kept up a lively correspondance with GIRAUD-TEULON and we found these letters.

GIRAUD was a pupil of the Ecole Polytechnique; in 1838, he was appointed as an artillery officer; then, after his resignation, as a civil engineer participating in the construction of canals and roads. He married Miss **TEULON**, the daughter of a barrister who was an influential deputy and the friend of numerous ministers.

GIRAUD added his father-in-law's name to his own name and then became **GIRAUD-TEULON**.

In 1843, he began to study medecine in Montpellier and in Paris. At the end of his studies, in 1848, after the king was expelled by the Revolution and when the Republic was re-established, he was Prefect for three years, until 1851.

When Napoleon III took the power, he left France and set up as a doctor in Nice which at that period did not belong to France. In 1856, he came back to Paris where he began to publish scientific works on diverse subjects.

In 1859, he published a small *Treatise on Ophthalmoscopy* and from that period on we can really consider him as an ophthalmologist. He dedicated his whole life to ocular optics, refraction and more particularly to binocular vision. His first work on *Binocular Ophthalmoscopy* was published in 1861. He defined the optical laws and demonstrated all the possibilities of the fundus examination.

According to his friend **NACHET**, he made a prototype which was later continuously improved:

— Screw enabling the individual adaptation to the interpupillary distance of every patient.



— Adaptation of a glow-lamp in the handle after Edison's discovery.

But GIRAUD-TEULON published only a few ophthalmoscopic results.

In Heidelberg, **KNAPP** published his own observations. The binocular ophthalmoscope which he used for his first experiments can still be seen in Heidelberg.

The following year, **LAWRENCE** presented in London a new simplified device which was built on the same principles.

Some years later, **COCCIUS** brought new modifications.

GIRAUD-TEULON, director of a private clinic, without official teaching, was however elected at the Academy of Medecine and formed numerous pupils.

Very cold and distant, his shyness hid a passionate temper which sometimes appeared as very sharp in scientific discussions.

As regards international relationships, he claimed the merits of **HELMHOLTZ**, **Von GRAEFE** and **DONDERS** when being into communication with French ophthalmologists.

By the end of his life, he wrote a voluminous treatise on binocular vision.

Deeply patriotic, he was much affected by the 1870 war and he asked to serve in the army which defended Paris; then he retired to Saint-Germain-en-Laye where, during the last years of his life, he treated freely patients in the hospital. His name was given to the street where he lived, but no plaque distinguishes his home from other houses.

From an ophthalmological point of view, the most important points of his considerable work are:

- his researches with **DONDERS** to find the exact definition of visual acuity on the metrical system.
- his discovery of the binocular ophthalmoscope.

However, we can say that after **GIRAUD-TEULON**'s death, the binocular ophthalmoscope has practically disappeared.

By the beginning of the XXth century, **ZEISS** presented a new device but all binocular ophthalmoscopes had still a great defect: they had to be held by one hand whereas both hands had to be free for a systematic examination of the periphery with the magnifying lens and indentation.

The account of his life by his son is very interesting for it explains the joys and difficulties of **GIRAUD-TEULON**'s life.

This family tradition, founded on moral and scientific rigour, was passed on to three generations before disappearing.

His only son, a professor of history and art at the University of Geneva, tried to find his oecumenical way between catholicism and protestantism during his whole life.

Faithful to the family tradition, he wrote unforgettable pages on **GIRAUD-TEULON**.

The Doctor's grand-son, a pupil of the Ecole Supérieure d'Electricité de Paris, was killed during a fight in Verdun in 1916.

His grand-daughter married in Lyon the painter **RICARD CORDINGLEY** whose paintings are to-day more and more appreciated. They had three children:

— a daughter who died very young;

— a son, an aviator, who left France in June 1940 to join Général de Gaulle in London. He was killed during an air-fight in 1942;

— the elder daughter who is now 59-years-old. She is single and lives alone in Cannes. It is in her house that, last December, we found these unpublished documents.

But in such short a time, I have only tried to recount the career of an exceptional man who was the fruit of a high-quality family tradition.

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