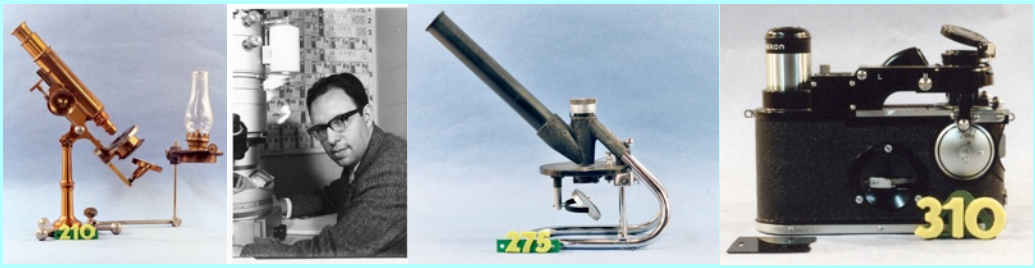

Manuel del Cerro, MD **Pittsford, New York**

My Microscope Collection and Library of the Microscope

Thanks to luck (often), persistence (sometimes), or knowledge (rarely), I have collected some five hundred microscopes over a forty years period. The same factors and a life-long love for books helped in forming a Microscope Library that presently encompasses some six hundred titles. Here is a glimpse to the Collection and to the Library.

THE MICROSCOPES

THE FOUR STAGES OF THE COLLECTION

1. THE ORIGINS. I started collecting microscopes before I knew I was collecting microscopes. Let me explain. Visiting sometime in the late 1960s a photographic shop that specialized in used equipment, I noticed in the window a beautiful microscope. I purchased it (figure 1). The dealer, an avid collector of classical cameras, mentioned casually that he knew of a few other old microscopes. Would I be interested by any chance?

Figure 1 [#320]. A monocular "Continental style" brass microscope, Bausch & Lomb model BB4, serial #19609, from the late 1890s. Notice the unusually long working distance provided by the 48 mm low power objective.

By the time I had about six microscopes, I realized that I had become a collector and that I would need to choose a theme for the collection. My original intent was to collect American 19th century brass stands. Soon I learned that this preference was shared by a number of collectors here in the USA, most of whom had already collected for years. I acquired some interesting pieces such as two Griffith stands (one is #210 on the masthead) and a Sidle polarization microscope (figure 2), but clearly this was not the most favorable hunting ground for a novice. The inclusion of European instruments of the same type (figure 3) improved the collecting chances but not sufficiently.

Figure 2 [#245]. A circa 1880 polarizing microscope by the John W. Sidle Company, from Lancaster, Pennsylvania.

Figure 3 [#500]. A stand signed E(dmund) Hartnack & A. Prazmowski, Rue Bonaparte 1, Paris. The serial number 12460 indicates a circa 1880 date of manufacture. This is an elegant example of the "Continental" style microscope. This design inspired many European and American microscope makers for almost seven decades.

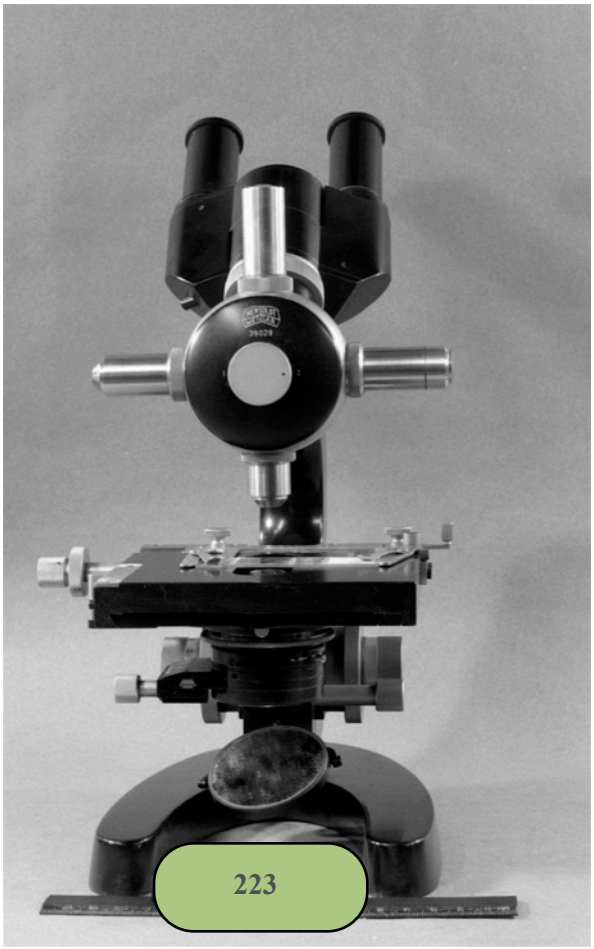

Figure 4 [223]. The post-WWII Diami, by the Hensoldt Company from Wetzlar, is affectionally called the "windmill model." The unusual arrangement of the objectives had a remote predecessor in the Nachet model #14 of 1886. It was however, not applied to other Hensoldt models, neither was it adopted by other 20th century makers. Its uniqueness makes of this a rare and desirable collecting item.

2- <u>THE MIDDLE COURSE CORRECTION</u>. The approach to the next phase of collecting was characterized by the "collect everything" philosophy. Very old or very new; research, teaching, or toy; if it was a microscope, it was included in the collection. Some highlights of this phase of the collecting are the masthead stands #275 by VL Instruments. Old Delft, Holland, #310 by Nikon, and microscope #223 by Hensoldt (figure 4, above). It was a hit or miss approach (see figure 5), but the only one compatible with a busy professional life.

Figure 5 [389]. "Stanley," an "antique" fake purchased, out of boredom, at the Bombay (now Mumbai) airport in 1995. Notice the immobile mirror.

3- <u>THE REFINING PHASE</u>. Retirement came and with it the time to better enjoy the good things of life. There was the opportunity of taking a fresh look at the collection and of deciding how to proceed. It was clearly necessary to create a Catalog, describing and illustrating each instrument and as much of its history as feasible. That, I am very happy to say, is done. Meantime, some minor pieces are been removed and replaced. Emphasis has been placed in acquiring microscopes made between 1900 and 1975. This a rich period in the history of microscope making, but one that is underrepresented in most collections. Included in this period are models that I used or saw in use during my decades-long career in academic medicine. Some 20th Century children's microscopes also form part of the collection. This is a recognition to the fact that those were the "instruments" (toys?) that lead many of us to our life-long association with the microscope.

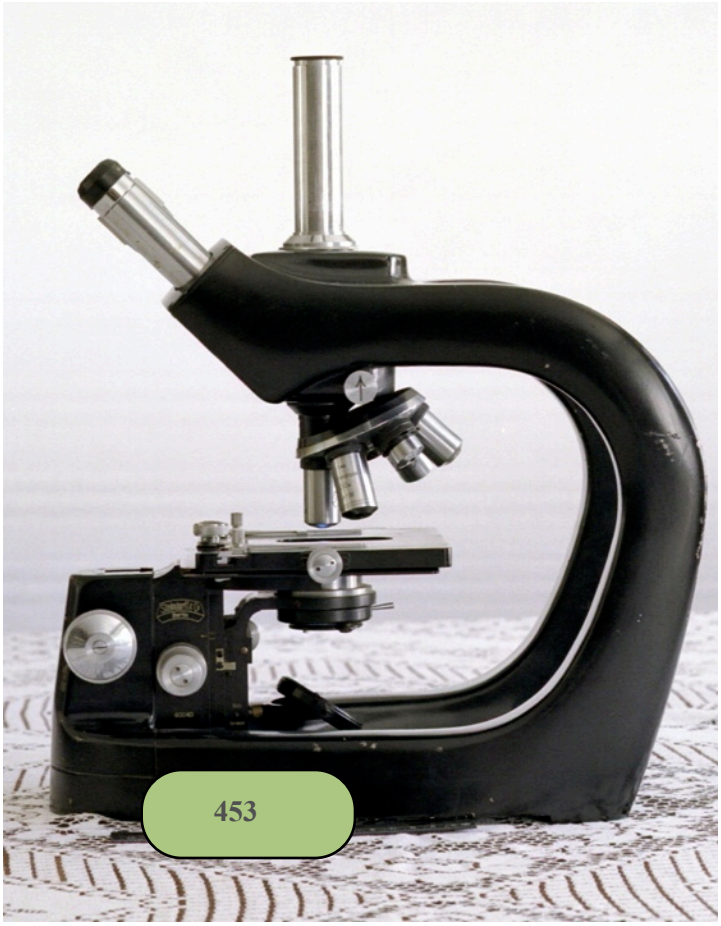

Figure 6. This 19xxs Steindorff "Microbe Hunter" microscope is a replacement for a minor piece. This is an instrument with an elegant design based on the dual arm concept. The instrument was visually impressive to the point of making it into the movies; unfortunately it was not so successful in the market place. The interesting story of the Microbe Hunter is discussed in an article by Martin Mach and I (Mach and del Cerro, 2004).

Figure 7, right. The Museum at Washington, DC.

4- <u>THE FINAL CHAPTER</u>. As many other collectors becoming of "some age", I had to face the question of what would be the fate of my collection once I have departed. Most of us heard horror stories about the fruits of years of dedicated collecting been dispersed in a few hours of auctioning, or unique items being discarded for lack of appreciation of their historic relevance. To avoid that happening to my collection, I bequeathed it and the Library to the National Museum of Health and Medicine in Washington, DC (figure 7). When the time comes, it will be permanently housed there as an independent collection, with some of the instruments in exhibition to the public and the whole available for study by collectors and interested persons. The necessary legal documents have been signed but I would prefer that they would not have to be implemented in the near future ....

THE LIBRARY

The Library was built on the basis of two major aims. One, securing documentation for the microscopes in the Collection, and two, of supporting my needs as a microscope hobbyist. Presently, the following categories are the ones better represented. 1- History of the microscope (figure 8). 2- Old microscopy books (figure 9). 3- Microscope books for the amateur. 4- Makers catalogs, brochures, user manuals and price lists (figure 10). 5- Pond water and microscopic life. 6- Micro-techniques, including histological techniques for animal and plant tissues (figure 11). 7- Photomicrography. 8- Modern applications including morphometry. 9- Microscopy for children (figure 12).

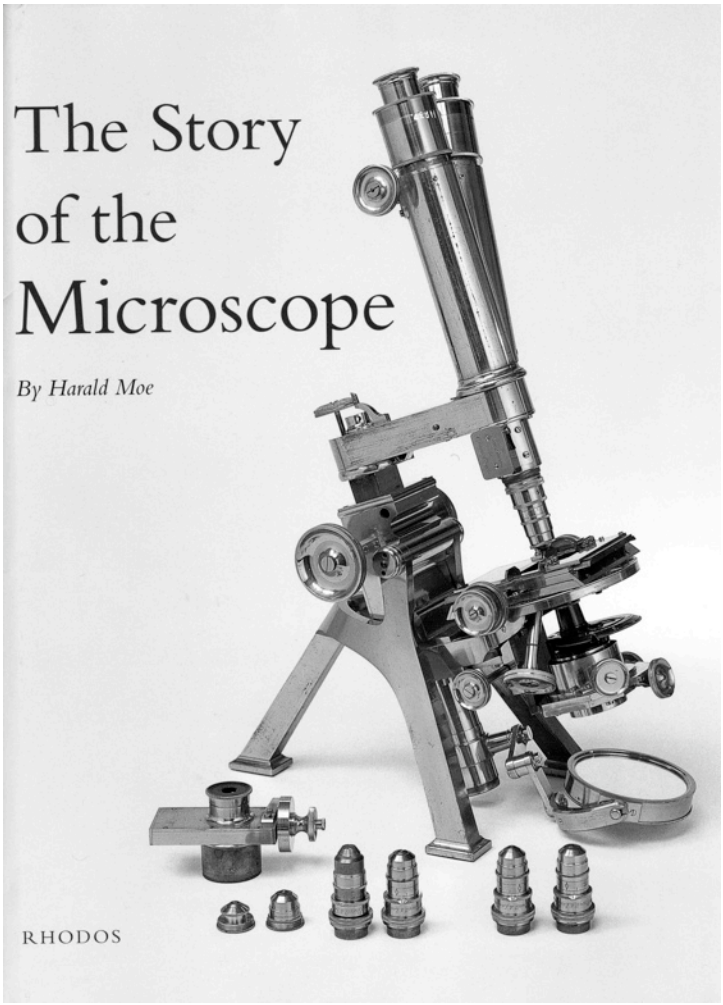

Figure 8. Now available in English translation (2004), Moe's book was originally written in Danish. It is in my opinion the best starting point for anyone seriously interested in the subject. It is superbly written and illustrated and it includes materials seldom covered in similar books.

Although most publications are in English; Danish, French, German, Spanish, and Swedish are also represented.

I will review a few book from some of the main groups. The selection is based on no more than whim; other titles may be as valuable or more from historical or technical viewpoint.

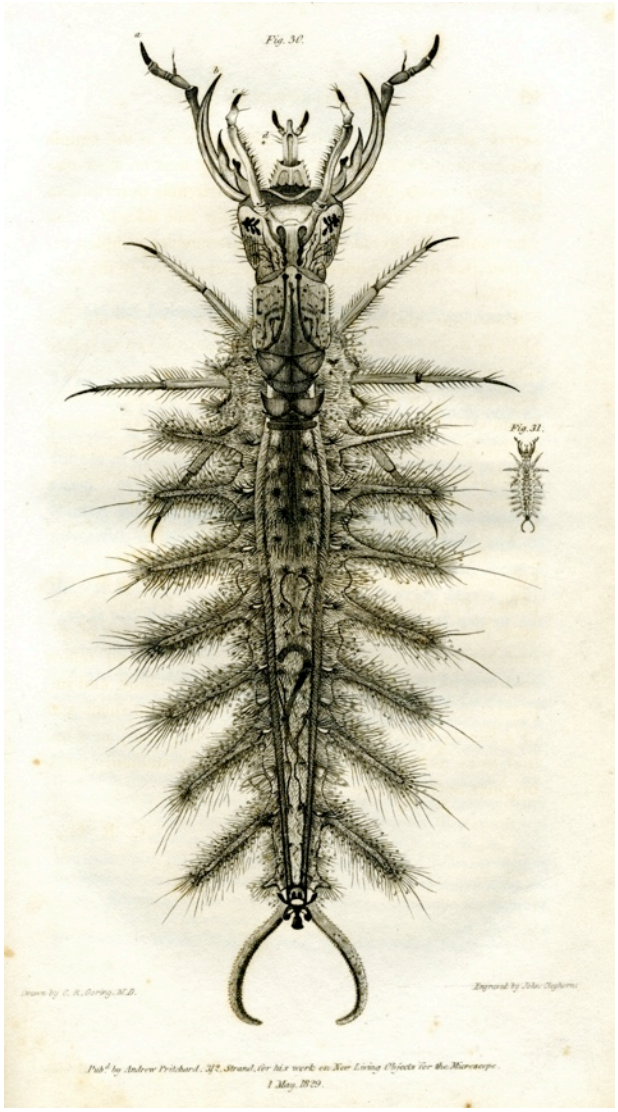

Figure 9, right. A larva of British Hydrophilus, a classic early 19th century microscope drawing. From Goring and Pritchard, Microscopic Illustrations of a Few New, Popular, and Diverting Living Objects; etc., London, 1830.

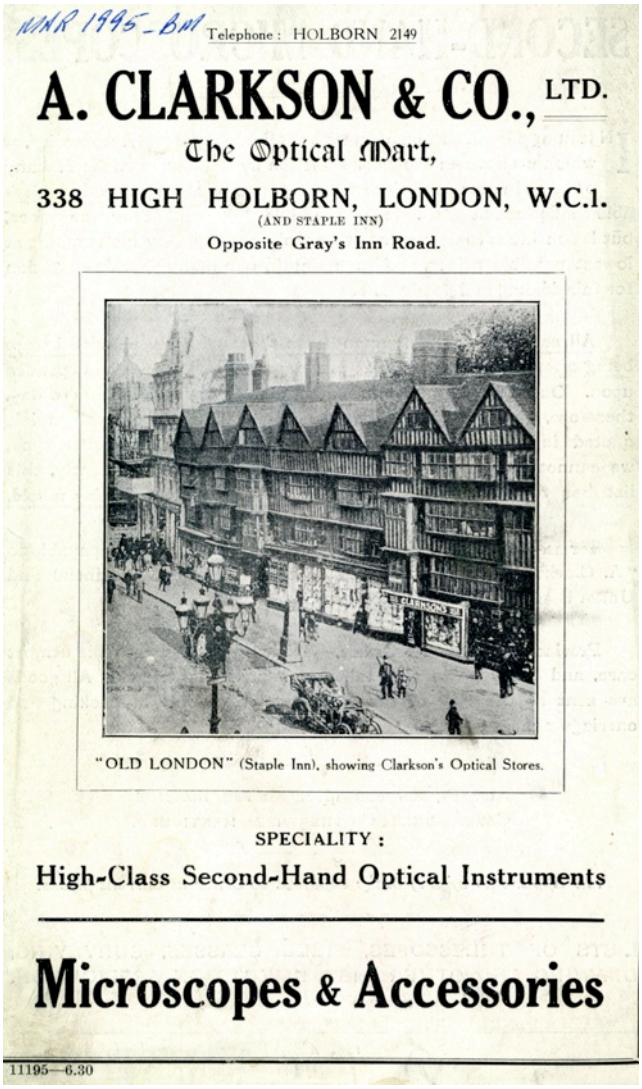

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Figure 10. A catalog and price list published in June 1930. It shows the prices asked for used microscopes; a seldom-published kind of information. A second-hand Watson's Edinburgh H, without optics was 30 BP. A monocular microscope by Himmler, with full optics was 20 BP. The maker was Otto Himmler, the optician, not his contemporary Heinrich Himmler, the SS and Gestapo chief.

Pour l'expérimentation J. Drbohlav [1] a appliqué avec succès aux Puces la méthode d'injection rectale employée pour les Poux par Weigl et Bacot (voir p. 1 028). La Puce est maintenue par une grande lamelle dans une lame à concavité (fig. 316).

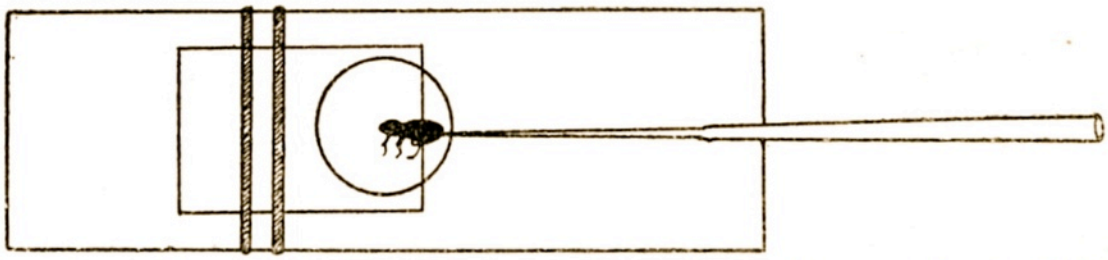

Fig. 316. — Procédé de Drbohlav pour l'inoculation intra-rectale des Puces.

Figure 11, above. Technique recommended for giving an enema to a flea, from Langeron, Precis de Microscopie, Paris, 1949. From its first edition in 1912 to the last in 1949, "Langeron" was the book of choice for information on microscopy and micro-techniques for those who could read French. The idea of giving an enema to a flea may appear a bit whimsical, but it was serious business in the heroic days of microbiology. Parasitologists used it to infect fleas with agents such as Leishmania donovani, the agent of human leishmaniosis, or Rickettsia prowazeki, the agent of typhus. R. Weigl, the developer of the method, died from an accidental infection with Rickettsia - it was serious business.

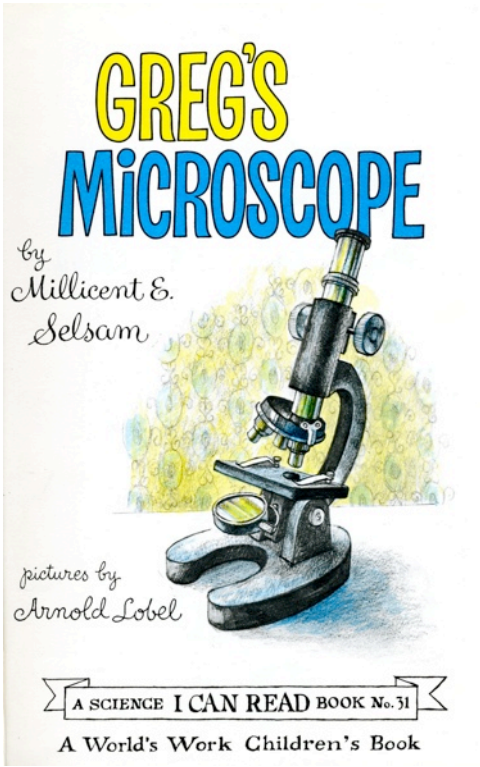

Figure 12, left. There may be a dozen good books to introduce children to the microscope. The 1963 Greg's Microscope remains one of the best. It is an introduction to microscopy but is also designed to improving reading skills. The text and the charming drawings by Arnold Lobel, all reflect the simpler family life of the so-called "Good Old Times."

As the legend to figure 12, indicates, I believe there are several good microscope books for children; I would like to end this "guided tour" to the Library of the Microscope, by mentioning Maxine Kumin: The Microscope. Harper & Row, USA., 1984. This is a delightful book dealing with Anthoni van Leeuwenhoek and his microscopic observations. It is said to be for those aged 4 to 8; I would say 6 to 10. The text is in rhymed verse! Each page carries a whimsical picture by Arnold Lobel. The text and pictures complement each other ideally. A short citation:

"Impossible!
most Dutchmen said.
This Anton's crazy in the head.
He says he's seen
a horsefly's brain.
We ought to ship him
off to Spain."

CONCLUSION

The doors to the Library and the Collection are open. I'll be delighted to exchange information with any and all who have read these lines.

ACKNOWLEDGMENTS

THE FACILITATORS. Many persons have helped me over to acquire and study the microscopes and books in the Collection. It is impossible to recognize each by name but I am equally grateful to all; a few names will have to suffice.

Richard Casey, a most kind and knowledgeable antiquarian sold me that first antique microscope, and then many others. **Donald A. Grover, M.D.**, a busy physician took hours from his scarce free time to gather children microscopes for the Collection. Paul Ferraglio, a well known microscope historian was generous in sharing his vast knowledge on the subject. **Martin Mach** is likely the world leading authority on double-arm microscopes; his knowledge helped much in documenting some of my microscopes. **Lazaros Triarhou, M.D., Ph.D.**, once my student and always my friend and fellow writer in many publications, made it possible to correlate microscopes in the Collection with similar models used in their work by Alois Alzheimer and Sigmund Freud.

The Library benefited from the excellent selections offered by the **Librairie Alan Brieux**, Paris; **The Gemmary**, Fallbrook, CA; Jeff Weber, Glendale, CA, and particularly by **Savona Books**, Lincolnshire, UK. I would never had been able to build such an extensive book collection without access to the offerings that fill the pages of the Savona catalogs.

SUGGESTIONS FOR RELATED READING

• **del Cerro, Manuel** and Lazaros C. Triarhou, (2006) Remembering Alzheimer: The Man, the disease, and the microscope – one hundred years later. (MicScape Magazine, October Issue).

• **del Cerro, Manuel** (2007**)** The Griffith Club Microscope, a "Queen of Grace and Utility Amongst Microscopes." MicScape Magazine, January Issue.

• **Kumin, Maxine**: The Microscope. Harper & Row, USA., 1984, unnumbered pages.

• **Langeron, M.** (1949) Precis de Microscopie. Collection de Precis Medicaux, Masson et Cie., Paris, pp. 1430.

• **Mach, Martin and Manuel del Cerro** (2004). Between Glamour and Glory: The Steindorff "Microbe Hunter." The Journal of the Microscopical Historical Society 12: 30-46.

• **Purtle, H. R.** (Ed.) (1974). (The) Billings Microscope Collection of the Medical Museum Armed Forces Institute of Pathology. Armed Forces Institute of Pathology, Washington, DC, 2nd Edit.

• **Selsam, Millicent E.** (1972 reprint of a 1963 text) Greg's Microscope. A Science I can Read book No. 31. With pictures by Arnold Lobel. World's Work Ltd., Great Britain. pp. 64.

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• **Turner, Gerard L'Estrange** (1981) Collecting Microscopes. Christie's International Collectors series. Mayflower Books, NY, pp. 120.

• **Turner, Gerard L'E.** (1989) The Great Age of the Microscope. Adam Hilger, Bristol, UK, pp., 379.