what method or model he should use for his own purposes. Most of your readers will be less anxious to know how people in the past have struggled than to understand what they can do here and now. (We are grateful to H. K. Henisch from Pennsylvania State University for his comments on this point as well as other matters pertaining to the writing). You should be the reader's guide in the labyrinth of conflicting techniques and results, using to this end your best experience and seasoned judgment, and being selective and critical without being offensive.

Strive to make your book an image of the present state-of-the-art of the field, without neglecting to mention alternative routes and options that may be of importance in the future. A book that stands the test of time is one that serves as a guide to future research as well as to the present.

To conduct the reader safety through the maze of published results, use diagrams, graphs, flow charts and so on whenever you can. Use these graphic presentations to compare between different models or techniques and to demonstrate their dependence on various parameters. Numerical data should be compiled into tables whenever possible; this way they can be used much more efficiently than if they are scattered throughout the text.

Insert summaries and synopses not only at the end of chapters or sections but whenever you feel that the reader deserves to be taken by the hand and told where he is now, where he is going to go, and where he has just been. Don't be thrifty on sub-headings; they serve to break the material into smaller chunks that can be more easily digested.

Your book is almost finished. The temptation is great to hurry up now, complete the work, send it on its way and go to the beach. But be patient; this is the time to read it once more from the viewpoint of the user rather than the writer, to make it more readable and clearer to the newcomer and to do final linguistic polishing. Remember that this may be your last opportunity to make improvements and corrections (to do it in the second edition is less effective, since the most important readers have already been "creamed off").

Your book is really finished—printed and bound. Don't rest on your laurels yet. Think of possible contributions to sales promotion. For example, make a list of potential buyers and send it to your publisher; tell him to whom he should send free copies, to whom he should send advertisement brochures, and in which journals to advertise. Most of the publishers will willingly accept such suggestions; after all, at this moment no one knows the market better than you do.

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Franken article

Having enjoyed so much Peter Franken's delightful review of recent progress in optics (November, page 160), I cannot resist noting that the remarkable ability of man to recognize patterns was recorded by Moses (Genesis 2:19–20), probably a millenium before Socrates, when Moses described Adam naming the animals.

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Laser gyro history

An excellent discussion of the current status of fiber-optic gyroscopes and a brief discussion of the commercially available ring laser gyro were given in October (page 20). It seems that as a device nears commercial use, the early history is of little interest to most of us. At the same time this early history becomes of considerable interest to those few involved in patent litigation. Since I was involved in this early history, I will give a brief and biased account.

Over twenty years ago while I was consulting for Space Technology Laboratories, the concept occurred to me that the degeneracy between clockwise and counterclockwise traveling waves in a resonant electromagnetic cavity would be removed by rotation, and that the frequency difference could be used to measure angular rotation. A disclosure of invention[1] was filed on 7 October 1959 and a more detailed report was made available in the STL library for military and space contractors.[2] This disclosure included coiled waveguides as an improvement on the Sagnac interference measurement as well as the entirely new concept of using a resonant cavity to measure rotation. Since *Physical Review Letters* was not enthusiastic about either a Sagnac experiment with matter waves or the measurement of rotation with an electromagnetic cavity, these ideas were presented at the January 1961 meeting of the American Physical Society in New York.[3] The comment of the referee that the resonant cavity concept was "interesting if true" gives an indication of the evaluation of this new idea. It was noted in the talk that the difference in angular frequency in a toroidal cavity with a path of m wavelengths is $m\Omega$, and a listener referred to this phenomenon as the "Coriolis–Zeeman effect for a photon." This listener may have been A. M. Sutton of the Kollsman Instrument Corp., who subsequently expressed his interest in a letter.

A proposal was submitted in March 1961 to the Air Force Office of Scientific Research, the National Aeronautics and Space Administration, and the Office of Naval Research for the development of a cavity with a negative resistance, such as a maser, as a device for the measurement of rotation. Even coiled light pipes and optical masers were included for study. A supplementary proposal in January 1962 proposed in more detail a resonant four-mirror gyro with laser gain. These proposals were rejected and P. K. Cheo and I began construction of a gyro of this design at Ohio State University. A. H. Rosenthal of Kollsman described a similar gyro[4] in a paper which was submitted in October 1961 to the Journal of the Optical Society of America and published a year later. The first operating laser gyro of this design was reported in February 1963 by W. Macek and co-workers at Sperry Gyroscope[5] in a post-deadline paper at the Third International Quantum Electronics Conference in Paris. After this successful demonstration, support and interest increased. Very important problems such as "lock in" of the degenerate modes remained to be recognized and solved. The commercial development of the present laser gyro owes much to the intense belief during the ensuing years by persons such as J. Killpatrick of Honeywell that the laser gyro could become a useful device.

Since I am collecting historical material regarding the laser gyro and fiber-optic gyro, I would appreciate receiving current and historical information from readers.

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3/82