or cube of sun's radius multiplied by its angular velocity, is proportional to a Keplerian constant for the solar system, $2\pi rv^2$, or planetary orbit multiplied by the square of orbital velocity, e.g., in cm/s units:

$$2\pi rv^2 = (6.28 \times 6.95 \times 10^{10}) \cdot (4.38 \times 10^7)^2 = 8.37 \times 10^{26}$$
$$r^3\omega = (6.95 \times 10^{10})^3 \cdot (6.28/2{,}510{,}000) = 8.4 \times 10^{26}$$

This equivalence suggests that planetary motions are related to the sun's rotation and regulated by electromagnetic laws, as Kepler surmised.

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Corneal Contact Lens Reference?

It has been widely quoted that Sir John Herschell was the first to suggest the possibility of making a corneal contact lens. Can any of your readers give us the exact reference in Sir John's writings regarding this idea?

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Guarded Circuit Bridge

A precision guard circuit has been constructed to operate in conjunction with a Modified Schering Bridge so that three terminal guarded measurements can be made on solid and liquid dielectrics over the operating frequency range of the bridge; namely, 100 cycles/sec to 300,000 cycles/sec.

The detector system used with this equipment is made up of a matching amplifier with built-in selective frequency filters between the output of the bridge and main amplifier. The main amplifier has a flat frequency response of 40 db from 60 cycles/sec to 1,000,000 cycles/sec. The output of the main amplifier is fed to one set of plates of a standard oscilloscope. The other 'scope plates are fed directly from the bridge supply oscillator through a phase shifter.

Amplifiers are operated at full gain with the signal forming an ellipse on the 'scope screen. Controls are adjusted so that resistance balance opens and closes the ellipse and capacity balance tips the closed line right or left from horizontal.

Accurate balance is obtained over the complete frequency range of the bridge.

The guarded circuit bridge enables one to make dielectric constant and dielectric loss measurements under controlled humidity conditions and at different temperatures, which are impossible with a two-electrode system. Surface leakage on a dielectric cannot be separated from volume resistance using an unguarded bridge. Edge corrections for electrostatic fringing are also eliminated by means of the guarded test electrode.

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Report from Sweden

The more important scientific activities of the Scandinavian countries are known in this country by way of the Scandinavian journals and abstracts in our own American medical journals. Therefore, when I went to Stockholm to visit the larger hospitals and state and municipal laboratories, I did so with a good many preconceived ideas and the feeling of at least a surface familiarity with the work in progress. I found, however, a laboratory organization quite different from that in the U. S., owing to some extent, to the absence of large commercial pharmaceutical plants and also to the semi-socialization of medicine in this country.

In this account I shall not attempt to give a complete picture of all the important laboratory activities in progress. My visits were confined almost exclusively to Stockholm. However, I was assured that the organization here is prevalent throughout Sweden.

Swedish laboratory medicine is now centralized to a large extent. In recent years demands for decentralization have increased, and to some degree plans for this process have been made and will be carried out within the next decade or two. Stockholm (and all the larger communities in Sweden) maintains one central municipal bacteriological laboratory that works with and for all the city hospitals except the Medical Institute—Karolinska Hospital—which is to a large degree self-sufficient. Individual hospitals maintain small bacteriological laboratories to do a few routine tests, but send most clinical diagnostic work to the municipal laboratories. But all the hospitals maintain adequate chemical, hematological and pathological laboratories.

The Municipal Bacteriological Institute is rather inadequately housed in an old converted school house, but plans for new quarters have been drawn up by the directing head, Prof. Davide. Funds are available and it is hoped that in three or four years the new quarters will be ready for use. The plans call for a continuation of the present organization into four scientific departments: clinical bacteriology, i.e., cultures and antibiotic tests; serology, including Wassermann and Widal tests, antistreptolysin titers, and staphylococcal lysin titers; intestinal infection; and tuberculosis. To this will be added a fifth and very important section—a virus department in which Prof. Davide tentatively plans an emphasis on encephalitis investigations.

Opportunities for research in the present cramped quarters are of necessity restricted. In the new building, however, adequate space for research is planned for, so that each department head will have a small laboratory for private scientific investigations. Prof. Davide is continuing his extensive 15-year work on bacterial metabolic products with bactericidal action on *Mycobacterium* tuberculosis. His associate, Dr. Pakalin, is also continuing with his work on the effect of generalized infections on the clinical course of tuberculosis. Both men were most kind in showing me their work, as were their staff, and the staffs in all the institutions I visited. English is generally spoken, usually very fluently, and older doctors speak excellent German.