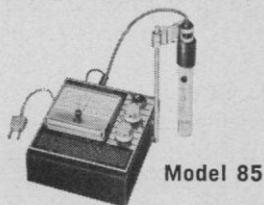


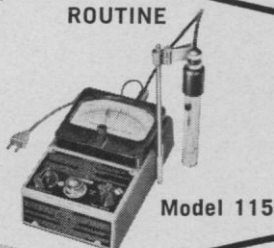
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Model 85

## ROUTINE



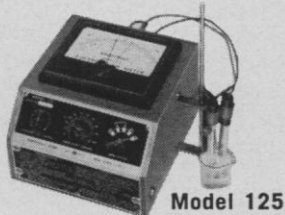
Model 115

## HIGH PRECISION



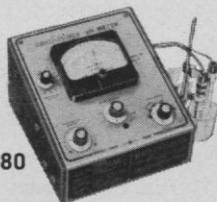
Model 110

## PORTABLE



Model 125

## EXPANDED SCALE



Model 180

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Those who introduced the medical research bill had to make a hard decision not to accept a compromise of the original specifications, including an amendment which would have put its administration into the Department of Agriculture. The original bill finally passed both chambers, with overwhelming support. The Governor signed it into law on 4 April.

The outstanding lesson of the effort to enact this bill was that, when there is adequate public discussion of the issues, an informed electorate can convince legislators that the use of animals in medical research is essential and should be supported. Similar legislation in other states would make completely unnecessary any additional federal legislation restricting the use of animals in research.

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## Revision of the Copyright Law

Under the caption of "Copyrights, royalties, reprints, and scholarly interests" [*Science* 141, 483 (9 August 1963)] appeared a letter by Franklin Folsom, and a reply by Hayward Cirker to which I would like to add some details.

Folsom advocates support for a revision of the copyright law that would increase the maximum duration of a copyright from 56 years to 76 years. Concerning the present maximum of 56 years he says: "Laws about such publicly useful property as real estate, oil wells, factories, and others do not normally place such severe limits on private ownership." This comparison would be more appropriate if it referred to the common law copyright which lasts as long as the author keeps his writing privately in his possession, but is lost as soon as he gives it to the public through publication. The comparison is not appropriate when made with reference to the federal copyright law which does not limit an existing right but creates a new one—the right to prohibit others from doing something they would otherwise be free to do, the right to prohibit them from copying and distributing material which has been published.

A patent constitutes a truer analogy. In common law, if an invention can be used and still kept secret by the

inventor, it is protected against theft, but after it has been disclosed to the public, others can copy it. The federal patent law, like the federal copyright law, creates a new right, the right to prohibit others from making, using, or selling counterparts of the patented invention. (Under the patent law the prohibition will apply even to others who may make the same invention independently, while under the copyright law the prohibition does not apply to others who may write the same thing independently.)

The requirements for issue of a patent by the Patent Office are, however, far more exacting than those of the Copyright Office for issue of a "Certificate of Registration of a Claim to Copyright" (notice the word "Claim"). The invention must, with some exceptions, be new and useful, whereas literary matter need only be "original" (meaning only that the writer did not copy it from someone else, although the same thing may have previously been written by others and may be in the public domain). The scope of the claims for an invention—its novelty and usefulness—must be clearly specified and delineated. The original material on which a copyright is claimed does not have to be specified: original and non-original material; and material on which a copyright has expired, can be combined to give the misleading appearance that a copyright is claimed on the aggregate and to complicate litigation. A patent application is scientifically examined by experts in the Patent Office for novelty and usefulness, but no examination is made or could be made for originality of literary material in the Copyright Office; in fact the Copyright Office does not necessarily retain a copy of all material filed with it, but may discard such material even before expiration of the copyright period. In other words, a patent represents a finding that the invention is a substantial advance over the prior art, but a certificate of registration of a claim to copyright does not represent a finding that a writing is creative or even that it is "original." Yet the potential life of a copyright is already more than three times as long as the life of a patent: an initial term of 28 years plus a renewal term of 28 years, or a total of 56 years, as against 17 years for a patent.

Cirker remarks that extension of the life of copyrights to 76 years is being promoted by a small, special-interest

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group and that such extension is not in public interest or in the interest of scientists. In support of this contention the following observations may be made. Anyone can claim a copyright on almost any arrangement of words and bring a charge of infringement against anyone who uses a similar arrangement, even though it is original with the latter person or was taken from the public domain. Since the first test of the validity of a copyright must be made in court, the threat of litigation, especially by one with greater financial resources, and the difficulties of proving originality by the accused as compared with the ease of showing similarity by the accuser put a powerful weapon in the hands of the accuser. With the accelerating rate of publications, more similarities among original writings are bound to result, and thus more charges of infringement where none has occurred. Also, a copyright may be misused to try to prevent the free flow of ideas, although an idea cannot be copyrighted. Hence there seem good reasons for not enlarging the privilege of copyright. With respect to scientists in particular, the extension of the life of a copyright would bring no benefit, for the accelerating rate of scientific developments makes it most unlikely that a scientific writing will command royalties or be in demand after 56 years. Scientists and the general public would be better served by a revision of the copyright law requiring a specification of the portions on which copyright is claimed, where it is not all original or where a copyright has expired on part of it—under penalty of voiding the copyright on the whole thing if a false claim is made.

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## Overhead and Research Grants

The recent AIBS predicament [*Science* 139, 317, 392 (1963)] put the spotlight on the rapidly growing, cancerous, "overhead" situation in U.S. science. It seems timely for someone who is not dependent on this source of income to point out what is happening.

"Overhead" of some sort is a justifiable feature of applied science contracts, where the government, or an industrial concern, requires that certain

work be done and must bid in the open market for the services of an institution with the necessary facilities and capacity to do the work, or build its own facilities with this capacity. This kind of science, if it can really be called science, does not differ from any other sort of commercial or economic activity. Whether the compensation is called "overhead" or "commission," it is essentially a cost-plus arrangement, and the amount of compensation is determined by the state of the market.

Fundamental science, formerly called "pure science," has come to be subject to the same profit motives. Research was once considered to be one of the normal functions of universities, museums, institutes, academies, and other intellectually oriented organizations. The authorities of such institutions were more than happy when their scientists were able to get grants-in-aid to enable them to carry on this function and considered it a normal part of their own duties to take care of the bookkeeping. We were outraged when we heard of a tight-fisted university administration demanding a 7½ or 10 percent "overhead" to cover the cost of these services.

However, the pattern was set by the contracts for "testing," "research and development," and other applied activities that required the services of scientists or technicians, and the demand for a cut of the pie spread to contracts and grants for strictly fundamental research—research which the scientists wanted to do because of their own intellectual interests. As granting agencies grew to handle the awarding of the increasing government support to pure science, they tended to be staffed by professional scientific administrators, often coming from the agencies that had handled defense and other applied contracts. The idea of overhead was not new to them, and they had also brought with them the businessman's distrust of the people with whom he deals. They were not any more willing to trust the scientist grantee to handle his own grant than they had been to trust the commercial chemist who had been employed to develop a new pesticide or the engineering company that had built a missile. They demanded the assurance provided by an institution that the scientist would not abscond with the money, spend it on wild parties, or take his family on a vacation. The