a shorter oestrus cycle in the rats after operation, are not entirely without fallacy. As mentioned above, it often is difficult to determine the duration of any one cycle because of the large number of scales present daily in the vaginal smears; irregular cycles may also occur in apparently normal animals.

The rats considered in Table I were observed daily during a period of four months before operation and during a similar period after operation. It would seem unlikely, therefore, that these changes are incidental. Other experiments now under way confirm the results shown in Table I.

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A NEW RECORD OF CASTOROIDES OHIOENSIS FROM ILLINOIS

A PERFECT skull of the giant beaver, *Castoroides ohioensis* Forster, has been sent to the Museum of Natural History of the University of Illinois for identification. It was found in a gravel pit on the farm of Mr. W. A. Paullin, near Bellflower, McLean County. While the details of the find are not very clear as regards stratigraphic relationships, it is evident from the perfect condition of the skull and also from the presence of clay in the brain cavity and in other parts of the skull, containing fresh-water mollusk shells, that the skull lay at the base of the gravel which was outwash from the Champaign moraine, covering the Shelbyville till sheet which underlies the Champaign till sheet in this region. That the specimen was originally buried in a lake or other body of water is clearly evidenced by the diverse character of the molluscan fauna found in the clay, which included the following species.

Sphaerium sulcatum	*Pomatiopsis scalaris*
Pisidium species	*Helisoma antrosa striata*
Valvata tricarinata	*Gyraulus altissimus*
Amnicola leightoni, var.	*Gyraulus urbanensis*
Cincinnatia cincinnatiensis	*Ferrissia paralella*
Pyrgulopsis species	

The stratigraphic horizon of the deposit in which the skull was found is Early Wisconsin, substage 1 of Leverett, or the earliest division of the Wisconsin stage of the Pleistocene. *Castoroides ohioensis* has been reported from all interglacial intervals of the Pleistocene, from Aftonian to post-Wisconsin, and is known to have lived in pre-Glacial time. Five records[1] are known from Illinois previous to the present specimen; these are: Shawneetown, Gallatin County, teeth fragments, Le Conte, 1852; Charlestown, Cowles County, skull, Leidy, 1869; Naperville, DuPage County, Bannister, 1870; Quincy, Adams County, Worthen, 1870; Alton, Madison County, Worthen, 1890. The animal was evidently wide-spread over Illinois, the records covering the length and breadth of the state.

The Bellflower specimen is being studied by Dr. A. R. Cahn, of the University of Illinois, who will make a detailed report of the specimen.

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[1] Baker, "Life of the Pleistocene."

PROFESSIONAL ETHICS AND THE ARTIST

DR. STILES' article "Absent-mindedness as a Factor in Professional Ethics"[1] brings up a point which scientists may well consider. There is, however, a prologue to the same story which I believe is an even worse ethical abuse than that to which Dr. Stiles calls attention. This is the practice, frequent among scientists of standing, who employ an artist or illustrator to do their illustrations, of denying this artist the right to sign these drawings or illustrations, and in no way making any acknowledgment of the true authorship of these drawings.

The defense is often raised that the artist deserves no credit because he or she is paid to do this work. However, so are scientists usually paid for their work, by government, university or private agency, and yet they invariably claim full credit for all their work (sometimes some of it questionably theirs) by affixing their own signatures. Again it is sometimes advanced that illustrations are very incidental, only a minor feature of a paper—something akin to the services of the stenographer in typing the manuscript. That this theory is also false is clearly shown by the incidents described by Dr. Stiles where illustrations are repeatedly copied by other authors, often without the slightest change. Dr. Stiles objects that in this copying acknowledgment should be made to the original author, the supposed source of the illustration. Why then should not the original author also acknowledge the *real* source of the illustration where it is the work of an artist, and not his own?

It is usually emphasized that these drawings are "made under supervision," as though the artist were merely a machine for mechanically recording the inspiration of the scientist. It is true, of course, that such drawings are made under direction, but the amount of it is in some cases so trivial as to be negligible. Furthermore, many illustrators, after a short novitiate in a particular line, understand what is wanted with only the barest suggestions from the superior, and proceed to solve all the smaller difficulties (and sometimes the larger) by themselves, in the execution of the work. I have personally known of several cases in which the careful, intelligent study of a specimen by the artist revealed details that the

[1] SCIENCE, 71: 100–101.

scientist had missed completely in his own shoddy haste. Even cases where the scientist worked from the drawings instead of from the specimens!

My point is that many illustrations for which no credit is given are as truly pieces of research as the manuscript which they are designed to accompany. Perhaps most scientists have the view that the artistic ability required to do a good illustration is really a rather ordinary faculty—something equivalent to learning to run a typewriter—and as such meriting no recognition on a plane with their own lofty genius trained to grapple with the problems of science, like the old gentleman in the operetta who admitted he had never written a sonata, but felt perfectly confident that he could if he ever desired. This delusion is frequent and could be cured by compelling such scientists to do their own illustrations until they could do them as well as their artists.

I believe I may claim to understand both sides of the question, inasmuch as I have studied art as long and as seriously as I have science, and have served an apprenticeship at scientific illustration myself, now discontinued for concentration upon the esoteric and rarified problems of parasitology. And it is my experience that it takes as much brains and training to do an acceptable illustration of a difficult subject as it does to tackle the average scientific problem. Some government bureaus are flagrant offenders in this way, also many workers of prominence in the universities. It is not contended that every diagram, however simple or trivial, should necessarily bear the name of the artist, or receive acknowledgment, but where a piece of writing is accompanied and often greatly enhanced by an elaborate series of illustrations which are not the handiwork of the writer it is plainly dishonest for the scientist tacitly to take credit for this part of the work. If it is not permissible for scientists to filch illustrations from each other it is a "distinction without a difference" that permits them to be filched from the artist. An illustrator's only chance of progress is through recognition of his work. Certainly the most altruistic scientist would object if compelled to publish all his work under the veil of anonymity. Moreover, there is often more real research and honest investigation in the unequivocal lines of a good illustration than there is in many of the padded, purloined and pilfered "contributions" that swell the scientific literature of to-day.

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STATEMENT IN REGARD TO PROFESSOR EINSTEIN'S PUBLICATIONS

BEFORE the time of Faraday and Maxwell, electric forces and magnetic forces were known, but they existed as distinct things, having no apparent relation to each other. To cause magnetic forces to exhibit themselves it was necessary to cause them to act upon magnets, and to cause electric forces to become manifest it was necessary to allow them to attract or repel other charged bodies or attract neutral bodies, but the presence of any magnetic state in those neutral bodies had no apparent effect upon the electrical phenomena. Then, when as the result of the experiments of Oersted, Faraday and others, it was found that a magnet was influenced by an electric current, and an electric current by a magnet, the whole question of the relation between magnetism and electricity became opened up. A composite theory developed in which magnetic and electric forces were intertwined, so that one could not speak in general of the forces upon a moving charge in terms simply of the electric forces, but had to include the magnetic forces as well. Neither could he speak of the forces upon a magnet entirely in terms of what were formerly regarded as magnetic forces, but had to introduce the electric forces as well. Then, for a long time, we had electric forces and magnetic forces harmoniously intertwined, but gravitation standing apart in the same sense as the electric and magnetic forces themselves had stood apart before the days of Faraday and Maxwell. Einstein's new theory as developed a few months ago did the same kind of thing for electric, magnetic and gravitational forces as was formerly done by Maxwell and Faraday for electric and magnetic forces. A composite theory intertwining all three was successfully produced. Just as in the purely electromagnetic problems, there were special cases of the composite structure in which the forces involved were purely electrical, the magnetic ones being negligible, and other cases in which the forces involved were almost purely magnetic, the electric ones being negligible, in such manner as to have suggested originally that these two types of forces were entirely indistinct, so in the composite theory involving magnetism, electricity and gravitation there are certain special cases in which the gravitational aspects are all-important to the exclusion of the electromagnetic, and others in which the electromagnetic aspects are all-important to the exclusion of the gravitational. So far our experimental researches have concerned themselves with cases of this kind, so that it has been our philosophic desire rather than the needs of experiment which has driven us to hope for a correlation of gravitation and electromagnetism in one general scheme.