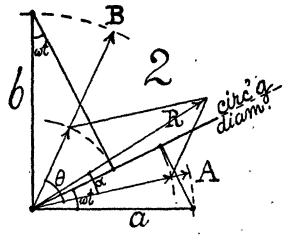
cos ωt and $y' = x \sin \omega t = (a/2) \sin 2\omega t$, the new circulating point runs with twice the original angular speed, and half the amplitude. Now suppose the amplitudes a and b in figure 2 are at right angles, and



have a common circulating diameter. Their foot points from the ends of a and b will lie on little circles of reference with diameters a and b and at distances $a \cos \omega t$ and $b \sin \omega t$ from the center of the common circulating diameter.

Finally let A and B be any two given vectors of length a and b. Lay off the segments just obtained along the directions A and B, and let R be their sum. Then $R = A \cos \omega t + B \sin \omega t$ the familiar ellipse, selecting A and B as conjugate radii. The relation of the angles ωt and α which begin together, and the constant ϑ (see figure) though easily found, is naturally complicated; but it is usually of no interest.

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OCCURRENCE OF A MUTANT MEADOW-MOUSE

WHILE trapping for rodents along the roadside on the outskirts of Ann Arbor, Michigan, an adult female meadow-mouse, *Microtus pennsylvanicus pennsylvanicus*, with marked color differentiation, was captured alive on October 30, 1927. The roadside here slopes gradually to a natural depression, the sides of which are covered with uncut red clover and where Microtus runways are common. The mouse was captured not more than twenty feet from the concrete road. Compared with Ridgway's color chart, the color of the pelage is as follows: back and sides, drab-gray at the tips of the hairs and white at the bases; belly, pale smoke-gray; nose and extending up between and slightly above the eyes, drab; dorsal streak on tail, hair, brown. The eye-color was red. Unfortunately the mouse died on December 16, 1927, curtailing any chance of breeding. It is now preserved as a specimen in the mammalian collection of the University of Michigan.

The authors are indebted to Dr. H. W. Feldman for the following notes concerning the possible genetic constitution of this mutant:

The color-pattern is unmistakably agouti and compared with other mutant forms of murine rodents, the specimen bears a close similarity to the albino allelomorphs. It seems to indicate a condition midway between the ruby-eyed variety of the Norway rat, *Rattus norvegicus* (as described by Whiting and King[1]), and the extreme dilution of the house-mouse, *Mus musculus* (as found by Detlefsen[2]). If the differences in the normal intensity of the pelage coloration of the meadow-mouse are considered, this mutant represents a deviation as great for the former species as extreme dilution does for the latter. Since albino meadow-mice have been noted by Dunn,[3] the albino series in this form probably consists of at least three allelomorphs.

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NOTES ON THE OCCURRENCE OF SARCOCYSTIS

RECENTLY in the preparation of histological sections of muscle, we encountered two cases of parasitic infestation, which seem worth recording. The parasites appear to belong to the order Sarcosporidia, genus Sarcocystis. Wenyon[1] in his "Protozoology" discusses this order with other groups under the heading, "Parasites of Undetermined Position." The members of the genus Sarcocystis, as the name indicates, share the common characteristic of forming, in one stage of the life cycle, cysts within the fibers of skeletal and cardiac muscle. Within the typical cysts are found the characteristic "banana-shaped" spores. Considerable variation has been reported in the sizes of both the cysts and the spores.

In one of our cases cysts of this parasite occur in the heart-muscle of the ox. The preparations were made especially for the study of the Purkinje fibers, and the parasites are found within these as well as within the ordinary cardiac muscle-fibers. Large normal cardiac fibers measure 36 micra in diameter. The smallest cyst which we have observed in such fibers measures 36 micra. Another in oblique section measures 89 by 440 micra and the largest 105 micra in cross-section, in which latter case no definite remains of the muscle-fiber can be made out. Strands of the syncytium of Purkinje fibers measure from 36 to 240

[1] Whiting, P. W., and King, Helen Dean, 1918, "Ruby-eyed Dilution, a Third Allelomorph in the Albino Series of the Rat." *Jour. Exp. Zool.* 26: 55–64.

[2] Detlefsen, J. A., 1921. "A New Mutation in the House-mouse." *Amer. Nat.* 55: 469–473.

[3] Dunn, L. C., 1921. "Unit Character Variation in Rodents." *Jour. Mamm.*, vol. 2: no. 3: 125–140.

[1] Wenyon, C. M., 1926, "Protozoology," Vol. I, pp. 760–769.