the jelly as that of the frog. The eggs vary in size, but on the average are about 1 mm. in diameter.

The fish continued to thrive, although feeding perhaps less ravenously, and was in perfect condition some five weeks later when I left the laboratory. About half the eggs were preserved in formalin, and, excepting the few kept by the writer, were deposited in the museum of the laboratory at Beaufort.

These observations were made at the laboratory of the United States Bureau of Fisheries of Beaufort, N. C. For permission to make use of the excellent facilities there, I am indebted to the Commissioner, Hon. George M. Bowers.

E. W. GUDGER.

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SEX DIFFERENCES IN THE ESTIMATION OF TIME.

IN volume 19, pages 707–708, of this journal Professor Robert MacDougall published an account of some experiments on the 'time sense' of men and women which seemed to indicate certain important sex differences. As he states, however, 'the noting of these sex differences was incidental to the primary purpose of the test, and attention is called to them here in order that observations on the part of others may be brought into comparison with the results presented by this group of persons.'

Since MacDougall's results were obtained by the examination of only fifteen persons of each sex, further investigation of the subject is evidently important. We have, therefore, carried out experiments along similar lines with hundreds of subjects for the purpose of ascertaining the significance of sex, age and physiological rhythms in the estimation of time. In the present report we shall consider only the relation of sex to time judgments.[1]

The subjects were required to judge the length of each of four intervals, 18, 36, 72 and 108 seconds, under four different conditions, which are designated in the table as idleness, estimating, reading and writing. During the *idleness* intervals the subject waited passively for the elapsing of the time; during *estimating* he made use of the method of his own selection by which he could best judge of the length of the period; during *reading* he listened while the experimenter read, and during *writing* he wrote from the dictation of the experimenter.

For comparison of the sexes groups of 251 males, from seventeen to twenty-three years old, and 274 females, from seventeen to twenty years old, were examined. In the accompanying table we present the means, mean variabilities and relative variabilities of each sex group for each interval and filling.

Intervals.	Fillings.	Mean.		Mean Variability.		Relative Variability.	
		M.	F	M.	F.	M.	F.
18″	I	17.7″	20.7″	5.4″	10.4″	30	50
	E	19.5	25.6	4.9	9.8	25	39
	R	15.5	18.5	4.9	9.1	31	49
	W	11.5	15.6	3.7	8.6	33	55
36″	I	33.3	42.8	9.1	16.6	27	38
	E	33.1	41.5	8.4	15.2	25	37
	R	32.1	41.7	8.4	16.4	26	39
	W	24.7	30.1	9.0	14.7	36	49
72″	I	63.3	73.0	17.2	27.2	27	37
	E	63.1	77.1	16.0	26.6	27	34
	R	57.9	70.8	17.3	30.3	30	43
	W	51.2	54.9	19.8	24.2	37	44
108″	I	92.7	113.4	29.8	40.1	32	35
	E	99.8	114.9	26.3	36.4	26	32
	R	90.1	100.5	28.3	40.2	31	40
	W	75.5	87.5	32.4	45.3	42	52

Summarily stated our investigation indicates the following sex differences:

1. The females were much less accurate than males in the estimation of the intervals under consideration. The range of the male judgments was from 1 to 300 seconds, that of the female from 1 to 400 seconds.

2. The females greatly overestimate the intervals in most cases, whereas the males almost invariably underestimate them. The length of the second itself is usually much shorter in the judgment of the female than in that of the male.

[1] A detailed account of the investigation is in process of publication in volume 2 of the *Harvard Psychological Studies.*

Our results agree entirely with those of MacDougall. Discussion of their significance may well be postponed until the completion of an investigation, now in progress, of the relations of age and physiological rhythms to time estimation.

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PRELIMINARY ANNOUNCEMENT CONCERNING A NEW MERCURY MINERAL FROM TERLINGUA, TEXAS.

The mercury minerals of the Terlingua district, Texas, are noted for the unusual composition of several of their number. Besides cinnabar, calomel and mercuric oxide, two oxychlorides, eglestonite and terlinguaite, have been described in detail by Professor A. J. Moses (A. J. S. **166**, 253, 1903), and a third, as yet unnamed, has been provisionally identified by him as likewise an oxychloride. This last, the No. 5 of Professor Moses, seems to be the chief mineral in a number of specimens from the Terlingua District lately received for identification from Mr. H. W. Turner. Its examination reveals a composition most singular and apparently representative of a class of compounds hitherto unknown in nature, viz.: mercur-ammonium salts. So far as yet known, the qualitative composition is represented by the components Hg, N, Cl, SO_4, probably O and possibly H. The tests, both qualitative and quantitative, thus far made, seem to show with little room for doubt that the mercury and nitrogen form the mercur-ammonium radical. Dr. P. G. Nutting, of the Bureau of Standards, has kindly examined spectroscopically the products of progressive heating of the mineral under reduced pressure; and besides nitrogen, mercury, chlorine and sulphur, obtained a small amount of helium. Singularly enough, this last seemed to come off wholly during the first warming of the mineral and before it underwent any visible breaking-up.

The complete examination of this novel mineral and its associated mercury compounds will probably consume much time. In order to reserve the field for the chemical examination by myself and the crystallographical (now in progress) by Mr. W. T. Schaller, this preliminary announcement is made.

W. F. Hillebrand.

U. S. Geological Survey,
Washington, D. C.,
December 14, 1905.

QUOTATIONS.

UNIVERSITY ADMINISTRATION.

In the December *Popular Science Monthly* Professor John J. Stevenson again takes up the question of the status of American college professors, maintaining that the present tendency to subordinate them to the trustees and to the president is contrary to the real interests of educational progress. The trustees are successful men of business or professional life for the most part, with neither the time nor the expert knowledge necessary to administer wisely the internal affairs of an institution of learning. The president, once a good professor as well, must now be a successful business manager and money-getter, teaching little if at all, and, like the trustees, possessing neither the time nor the knowledge requisite to the sagacious exercise of the powers which are generally either sought by him or thrust into his hands under existing conditions. The trustees, then, should confine themselves strictly to the management of the property and the task of securing funds for the carrying out of such educational policies as the teaching force may advise. Even in filling vacancies in their own number, their action, he is inclined to think, should be subject to veto by two thirds of the full professors. Vacancies in the faculty should be filled by the faculty itself, subject to confirmation of the trustees merely *pro forma,* or to rejection in case there are not funds available for the required salary. The presidency should be abolished altogether, each faculty selecting its own executive head, who should be simply *primus inter pares,* and the mouthpiece of the faculty in its relations with the trustees. It is noticeable that the editor of the *Monthly,* in a paragraph relating to the recent conference of college and university trustees held at the installation of the presi-