young were obtained (by Mallett), in tanks kept at a high temperature with an abundance of forced air, from three virgin female swordtails, members of a brood that consisted entirely of females and was raised in his tanks. Later these "hybrid" fish were permitted to interbreed, and a total of 10 broods and 100 "hybrid" individuals obtained to date would be a very conservative estimate, though the original swordtail mothers died without again giving birth. The young were not in any way obvious hybrids but swordtails, mostly female swordtails and less than 10 per cent. male swordtails. An exception was the first-born fish of the first-born original-cross brood, which turned out to be a female guppy, quite typically such to outward appearances. At the age of six months this fish developed a crooked spine, and at between 9 and 10 months gave birth to brood of some half dozen young by a "hybrid" male swordtail, all of which turned out to be swordtails, not guppies.

The parentage of the original crosses seems irrefutable. The swordtail females used were about 18 months old, to be sure, when bred, but there had been no male swordtail or live-bearers other than guppies in the Mallett tanks for a year prior to the birth of their young. That the above-mentioned female guppy was a *bona-fide* member of one of the same broods can hardly be doubted. Its birth was observed (Mallett) and its growth watched from day to day. In the beginning noticeably larger and different from its brood-mates, they grew more rapidly and exceeded it in size. That this guppy gave birth to a brood of swordtails is only reasonably certain. From lack of space it was temporarily confined while pregnant in a tank with young "hybrid" swordtails, and when its own brood appeared, contrary to expectation they could not with certainty be differentiated from the smallest of these, hence the young were allowed to grow up together and all turned out swordtails.

The results obtained call to mind those described by Hubbs and Hubbs[1] for one of the live-bearers, for which they suggest gynogenesis as explanation, later questioned by Howell.[2] If gynogenesis does exist in these fishes it might reasonably be looked for in the present "cross." Nor would the female guppy be entirely out of line with such an explanation if we suppose some chance somatic determinant as well as germinal stimulus to have been received from the male parent without his chromosomes being accepted in the normal way.

GUY C. MALLETT
J. T. NICHOLS
AMERICAN MUSEUM OF NATURAL HISTORY

NEW DISTRIBUTIONAL RECORD FOR THE MEDUSA CRASPEDACUSTA

ON the evening of July 25, 1934, a trip was made to a small artificial pond located near the city limits of Dallas, Texas. Much to my surprise, the water of the pond was teeming with the medusae of *Craspedacusta ryderi* (Potts). A single scoop with a pint jar yielded sixteen that varied from 6 to 12 mm in diameter.

On the following day another trip was made to the pond with the necessary equipment for a general survey. The pond, which is two years old, covers approximately one acre and is three and one half feet deep. The water supply is obtained from a Dallas city main and runs in constantly, although during this excessively hot, dry weather there is very little overflow, since evaporation is almost equivalent to the inflow. The pond is well stocked though not crowded with water-lilies, which were purchased from Texas and New Jersey nurseries. The lily-pads and stems are covered with dense growths of algae. Examinations of plankton samples revealed an abundance of ostracods, copepods, rotifers and infusoria, thus insuring sufficient food for the medusae. The pond is also inhabited by goldfish and green sunfish.

Wading among the lily-pads stirred up the "ooze" on the bottom, and in areas where the medusae had not heretofore been visible such riling of the water caused them to appear by the thousands. A close field examination of lily-pads and stems with a hand lens and microscopic examination in the laboratory of scrapings from the vegetation and sides of the pond have failed to reveal the hydroid generation. On the third of November the medusae were still abundant. The cycle will be carefully followed, and it is hoped that eventually the hydroid generation will be found.

According to Bennitt's (1932) summary[1] of the American records of *Craspedacusta,* the present report brings the total number of states from which they have been recorded up to eleven, and Texas is the third state west of the Mississippi from which it has been reported.

ELMER P. CHEATUM
SOUTHERN METHODIST UNIVERSITY

SOCIETIES AND MEETINGS

SUMMER MEETING OF THE AMERICAN MATHEMATICAL SOCIETY

THE fortieth summer meeting of the American Mathematical Society was held at Williams College, Williamstown, Massachusetts, from September 4 to 7. This was the second meeting of the society at Williamstown, the first having been held in 1905. The Mathematical Association of America, which met in

[1] SCIENCE, n. s., 76: p. 628, 1932.
[2] SCIENCE, n. s., 77: p. 389, 1933.

[1] *American Naturalist,* 66: 287–288.

conjunction with the society, held its sessions on Monday afternoon and Tuesday morning.

The principal feature of the meetings was the seventeenth of the series of colloquium lectures delivered under the auspices of the society. The lectures were delivered by Professor Norbert Wiener, of the Massachusetts Institute of Technology, on the subject "Fourier Transforms in the Complex Domain." Professor Wiener delivered four lectures of an hour and a quarter each, one on Tuesday afternoon and the others on Wednesday, Thursday and Friday mornings. The first lecture was devoted to Fourier transforms in strips and half planes, the second to quasi-analytic functions, the third to closure properties of trigonometric functions, while in the fourth the lecturer discussed the harmonic analysis of random functions. The material of these lectures was the outgrowth of a fundamental and far-reaching series of investigations carried on by Professor Wiener and Dr. R. E. A. C. Paley, of Cambridge University, while the latter was spending a year at the Massachusetts Institute of Technology. Dr. Paley was killed in an unfortunate skiing accident while on a brief vacation in the Canadian Rockies in April, 1933.

On Thursday afternoon, by invitation of the program committee, Professor J. A. Shohat, of the University of Pennsylvania, gave an address entitled "On the Expansion of Functions in Series of Orthogonal Polynomials."

Of the shorter papers read before the society at its various sessions, twenty were devoted to analysis, four to geometry and analysis situs, seven to algebra and two to mathematical logic. In addition, twenty-six papers were read by title, eleven in algebra and number theory, nine in geometry and analysis situs and six in analysis.

The local committee arranged a delightful program for the visiting mathematicians and their friends. Wednesday afternoon was featured by an automobile trip over the Taconic Trail to Bennington Battlefield and the new Bennington College for Women. On Wednesday evening a very fine organ and song recital was given by Dr. and Mrs. Charles Louis Safford. Dr. Safford is the director of music at Williams College. On Thursday evening the banquet of the mathematical organizations was held at the Hotel Greylock. Professor E. V. Huntington acted as toastmaster. The speakers were: Dr. Tyler Dennett, the new president of Williams College; Professor Arnold Dresden, representing the Mathematical Association, and Professor E. R. Hedrick, representing the society.

J. R. KLINE,
Associate Secretary

DENTAL CONFERENCE AT YALE UNIVERSITY

A GROUP of fifty dental surgeons from various parts of the country met at the Yale University School of Medicine on October 24 and 25 for a discussion of scientific subjects relating to dentistry. Dr. A. Leroy Johnson, of New York City, presented a paper on studies of the teeth and jaws of dogs from the Cornell Experimental Morphology Farm. He described tooth defects found in certain cross-breedings in dogs fed adequate diets and showed the similarity to defects which have been shown to be associated with dietary deficiencies. The importance of genetic factors in research on the teeth was further emphasized in the discussion of the paper.

A clinical study of restorative work on the teeth from the point of view of the effect on the health of the individual in subsequent years was described by Dr. Yngve Hildebrand, of the Royal Institute of Stockholm, Sweden. Advantages and disadvantages of restorations as evidenced in a number of individuals over a period of eight to ten years were analyzed. Stresses upon the teeth, bone and other supporting tissues, and the results of these stresses were noted in detail. Dr. Hildebrand illustrated his discussion with clinical and statistical material derived from his study of the subject for the past twelve years.

A report on a study at Yale on nutrition and dental changes was presented by Professor Arthur H. Smith, Miss Aline U. Orten, Dr. Casper C. Burn and Dr. Sumter S. Arnim. One aspect of the study had to do specifically with the influence upon the teeth and related structures in rats of a diet deficient in inorganic salts. The investigation showed in general that the skeletal bone and the tooth structure respond in different ways and in different degrees to the same dietary factors. A presentation was also made of a series of patients to show medical-dental relationships in diagnosis and treatment. Cases from Yale were presented by Dr. B. G. Anderson, director of clinical work in dentistry, and Dr. David Weisberger, with the collaboration of staff physicians. Case reports were made also by Dr. J. C. Healy, of Tufts Dental School. A demonstration and discussion of laboratory work being carried on by the dental group at Yale was conducted by Professor Smith and Dr. Burn with the assistance of Dr. Lester Burket, Dr. Frank Kanthek and Dr. Harold Genvert.

The purposes of the dental program at Yale were described as: (1) To place the study of the natural history of the teeth in health and disease on a sound scientific basis; (2) to investigate the causes of diseases of the teeth and associated structures in relation both to specific agents of local morbidity and to the general health of the individual; (3) to create a