Knight, on the other hand, found that all the plants of *E. siliculosus* studied by her at the Port Erin Biological Station have a diploid soma and bear both plurilocular and unilocular sporangia on the same plant. The plurilocular sporangia in this locality produce diploid zoospores. In the unilocular sporangium, however, the first nuclear division is a reduction division, and the haploid zoids from this structure are gametes which fuse in pairs. At Port Erin, she states, no alternation of generations occurs, and the diploid phase is the only one in the life-cycle.

The fact that zoids from plurilocular sporangia may at times act like zoospores has long been known; and the work of Knight suggests that in such cases they came from diploid plants. The zoids from unilocular sporangia have always been regarded as zoospores; and Knight is the only author who has found them sometimes behaving like gametes.

From aquarium cultures made at Naples, Berthold obtained plantlets that bore both plurilocular and unilocular sporangia on the same plant. The precise origin of the young plants in question was not determined. Berthold suggested that they may have come from zygotes. Since, however, unfertilized gametes, which he had already found to be capable of parthenogenetic development, were present in these aquaria we must keep in mind also the possibility that these in reality may have given rise to the small plants. Berthold also did not learn the function of the zoids from these cultured plants. Although he raised plants with unilocular sporangia in culture, he makes no mention in the text of finding these in the sea at Naples. (The plant shown in his Fig. 8 is referred to as having been found in the open). Knight states positively that she was unable to find unilocular sporangia there after careful search. The part that is played by unilocular sporangia in the normal life-history of this species at Naples therefore remained quite problematical.

It was apparent that further research on Ectocarpus was very essential. The facts that were known suggested the occurrence of an alternation of generations in this plant, but the evidence was far from adequate to substantiate this. It was also important to know whether the plants whose unilocular sporangia produce zoospores were diploid or whether unilocular sporangia may sometimes arise on haploid plants and give rise to zoospores which serve to multiply this generation.

This paper is a preliminary report of the results of an attempt to determine the course of the life-cycle of *Ectocarpus siliculosus* on the Atlantic coast of North America. The aim was to learn whether both haploid and diploid plants occur here and, if so, the rôle played by each in the life-cycle.

The material for this study was collected about Woods Hole, Massachusetts, during the summers of 1931 and 1932. All plants at Woods Hole itself were like those studied by Knight at Port Erin, since they were diploid and bore both kinds of sporangia. It was found, however, that the presumably haploid zoids of the unilocular sporangia as well as the diploid zoids of the plurilocular sporangia invariably germinate directly. That is, the zoids of the unilocular sporangia of these plants do not act like gametes, as Knight reported for the plants at Port Erin. Sexual plants as well as the asexual ones were found at Penikese, an island twenty miles from Woods Hole. The sexual plants are haploid and bear only plurilocular sporangia; their zoids serve as gametes, and they are distinctly dioecious. These sexual plants are therefore like those found at Naples. Parthenogenetic development of both male and female gametes occurs.

The cytological studies thus far made indicate that the number of chromosomes in asexual plants, with both kinds of sporangia, is twice as large as that found in the sexual plants, which bear plurilocular sporangia only.

The life-cycle of *E. siliculosus* near Woods Hole therefore exhibits a definite alternation of generations. Diploid asexual plants with both unilocular and plurilocular sporangia produce, in the plurilocular sporangia, diploid zoids which develop directly into other diploid plants. The first division of the nucleus in the unilocular sporangium is presumably a reduction division such as Knight found. The haploid zoids produced in this structure germinate to form haploid sexual plants. The haploid sexual plants are dioecious and produce gametes in plurilocular sporangia. After the fusion of these gametes in pairs the zygotes develop into diploid asexual plants and thus complete the cycle. The haploid sexual generation propagates itself by the parthenogenetic development of unfertilized gametes.

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ON THE SCIENTIFIC NAME OF THE WEBBING CLOTHES MOTH

THE webbing or common clothes moth, *Tineola bisselliella,* was first described by Hummel in 1823 (Essais Entomologiques 3: 13). In spite of the fact that the specific name was spelled with two s's in the original description, only one s is used by most writers at the present time. This is true of authors in Europe as well as of those in this country. Dyar[1] and Walsingham,[2] however, both spell the name with two s's.

The mistake in spelling is probably due to the fact that few writers have had an opportunity to see Hum-

[1] *U. S. Nat. Mus. Bul.,* 52: 570, 1902.
[2] *Zool. Soc. London, Proc.,* 1907, p. 1026, 1908.

mel's original description. The publication, "Essais Entomologiques," Nos. 1 to 7, was printed in St. Petersburg and was evidently issued in installments from 1822 to 1829. According to the Union list of serials in libraries of the United States and Canada, only three institutions have copies, and none of them owns the complete work. The Museum of Comparative Zoology (Cambridge) is listed as having Nos. 4 and 6; the Academy of Natural Sciences (Philadelphia) Nos. 4 to 7; and the American Philosophical Society (Philadelphia) No. 6.

The department of entomology at Cornell University has the good fortune to own all seven numbers of these interesting essays. On the inside of the front cover appears the following statement: "A very rare work. This copy contains No. VII, of which Hagen observed, "so excessively rare as scarcely to be known." " In Hagen's "Bibliotheca Entomologica" (1862, Vol. 1, p. 391) under the title, "Essais Entomologiques" he says, "Die Essais sind nicht häufig; No. 7 sogar äusserst selten und kaum gekannt."

Hummel's original description of the webbing clothes moth, in this rare and interesting publication, is written in Latin and is followed by a brief statement in French regarding the habits of the insect. Suggestions are also given for controlling the pest, especially in furniture. Preceding the description is the scientific name, *Tinea bisselliella,* followed by an asterisk which refers to a footnote at the bottom of the page. The footnote reads, "Du mot latin 'bisellium,' canapé." But Hummel may not have been as well versed in the classics as he was in entomology, for his spelling of the Latin word is incorrect. The word "bisellium" has but one s. A Latin lexicon gives the following definition: "Bisellium, a splendid ornamental seat of honor (so called because there was room for two persons upon it, although only one sat thereon). . . ."

When Zeller[3] wrote a more extensive description of this insect he dropped the second s in *bisselliella.* Perhaps Zeller was a better student of the classics than Hummel. In 1853 Herrich-Schäffer placed the species in the genus *Tineola* and he also used one s. Walsingham[2] criticizes Zeller's spelling and calls attention to the fact that Hummel used two s's.

According to the rules of priority, a name must stand as published in the original description. Therefore, although the Latin word was misspelled by Hummel, the mistake must stand and the specific name of the webbing clothes moth must remain *bisselliella.*

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[3] *Linnaea Entomologica,* 6: 166, 1852.
[4] *Syst. Bearb. Schmett. Eur.,* 5: 81, 1853.

HUMAN NECROBACILLOSIS

NECROBACILLOSIS is an acute infectious disease due to *Actinomyces necrophorus* Löffler. This condition was probably first noticed by Dammann, in 1870, in diphtheritic infections in calves. Schmorl (1891) reported a fatal enzootic occurring the previous year among his laboratory rabbits. *A. necrophorus* was isolated from the caseonecrotic lesions. Schmorl and one of his assistants each had a small abscess on one finger from handling these rabbits. Stained smears of the pus showed the characteristic gram-negative, beaded bacillus. In 1910, the writer isolated *A. necrophorus* from the lesions on the hand of a veterinary inspector.

Following the above reports of human necrobacillosis, the literature contains cases of pseudodiphtheria, infections of the arm, abscesses and necrosis of the tissues of the hip joint, retropharyngeal abscess with gangrene and extension into the perithracheal and subcutaneous tissue and mediastinum. Two deaths occurred in the series. Recently the writer isolated *A. necrophorus* from a lung abscess of man.

Among the principal pathologic conditions (other than man) in which *A. necrophorus* is found may be mentioned lip and leg ulceration of sheep, gangrenous dermatitis of horses and mules, necrotic stomatitis in cattle and multiple necrotic foci in the livers of cattle and hogs. Spontaneous necrobacillosis has been observed in nineteen different species of animals.

A. necrophorus is a pleomorphic anaerobe. It may vary from cocci to long filaments, and from solid stained rods to filaments with granules. Spores are not formed. It is gram-negative.

Several mediums have been used for the growth of *A. necrophorus,* but a medium of veal infusion, peptone and cystine is very satisfactory. For primary isolation serum should be added.

To obtain the woolly colonies in agar stab cultures, one must not use too stiff an agar, 0.3 per cent. being satisfactory for the demonstration.

As *A. necrophorus* does not produce group agglutinins the agglutination reaction can not be used for the differentiation of this organism.

Hemolysis is another property that is variable; some authors state that necrophorus is strongly hemolytic, while others state that it is non-hemolytic.

The fermentation of carbohydrates is, likewise, at variance.

Subcutaneous injection of the microorganism into the rabbit produces an area of necrosis and, after a time, invasion of the internal organs, although some strains do not produce anything beyond the local lesion, which heals.

The difficulty of isolation of anaerobes in general, and of *A. necrophorus* in particular, is probably re-