that one who admits that there is any "experimental" indeterminateness in any organic process can not consistently stop short of the extreme view he has himself defined. But he has scarcely proven this; and in any case, if he imputes the acceptance of this view to Driesch, he is identifying the conclusions which he himself might draw from certain of Driesch's positions (if he held them) with the conclusions which Driesch draws.

I am afraid the foregoing shows that Professor Jennings has, after all, succeeded in luring me into "exegetical inquiries into the precise meaning of a rather difficult writer." However interesting these may be, there are other questions in which, I confess, my interest is more acute—as, no doubt, Professor Jennings's really is also. Among these is the question: What do the data chiefly emphasized by Driesch *really* tend to prove about organisms? On this, which was the principal theme of my previous communication on the subject in SCIENCE, Professor Jennings's recent letter has little to say. Yet I think that his letter leaves the matter in a not wholly satisfactory logical condition; and that there is a good deal more which might with advantage be said, in the interest of a full clearing up of this genuinely significant issue. But that undertaking, to which I hope before long to attempt to contribute elsewhere, would call for a lengthier disquisition than would be suitable for publication in this journal.

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October 15, 1912

WINTER WEATHER IN FLORIDA

UNDER the above caption in SCIENCE for May 31, 1912, Mr. Andrew H. Palmer submitted some observations on Florida weather. The winter of 1911–12, in Florida, was by no means severe, but the temperature averaged low during January and February, as compared with the normal, the monthly departures during the winter months being: December, +5°.1; January, —0°.6, and February, —4°.6.

Mr. Palmer's statement that "Florida's climate did not receive careful attention until large numbers of settlers were attracted by the recent land-boom," is rather gratuitous. For forty years the weather bureau records of Florida have been consulted by people of broad intelligence in their search for truth, regarding the climatology of the state. With regard to the statement: "In all but eight of the last seventy years freezing temperatures have occurred in Jacksonville," a few supplementary facts are essential to a correct understanding. Mr. Palmer's figures were correctly copied from "Climatology of the U. S.," but included in that report were miscellaneous records that antedate those of the weather bureau, and, though given official cognizance to the extent of publication, yet, the official life of local weather bureau data begins with the establishment of a station in Jacksonville in 1871. The records previous to 1871 were mostly by voluntary observers, and they are not recognized as coordinate in importance with those compiled under official supervision during subsequent years; hence, to a certain extent, they are taken *cum grano salis*. A freezing temperature in Jacksonville is not followed, necessarily, by similar conditions in the citrus belt for Jacksonville sustains, approximately, the same relation to the rest of the state as Sacramento, California, does to the San Diego section.

The above qualifications are pertinent also in the matter of snowfall in Florida. During the severe blizzard of February, 1899, snow fell over the extreme northern portion of the State to the depth of several inches; that is, over an area of slightly more than 1° in latitude. This was the heaviest snow fall in Florida of which there is authentic record, and it is believed to be an expression of maximum intensity along that line. Certainly it was not exceeded during the century.

senschaft, 1911, he defines biology as a *Gesetzeswissenschaft*, which has for its most fundamental part "the doctrine of the laws of morphogenesis." And he speaks of these laws as discoverable through *gewisse Sondererfahrungen*. Vitalism, he adds, "never means *Gesetzlosigkeit*" (pp. 34, 37, 39).

Mr. Palmer points out further: "The St. Johns River was frozen." My, that was a cold wave, indeed! The St. Johns River is from 1 to 5 miles wide, and 20 to 40 feet deep, with the usual tidal conditions that obtain in streams contiguous to the ocean. That this river, in latitude 30° North, should freeze over is a new science item of wonderful potentiality. Ice may have formed near the fringe of the river during the severe weather of 1835, but the St. Johns freezing, never! "Climatology of the U. S.," by Professor Henry, stated: "The St. Johns was frozen several rods from the shore," quite a distinction from: "The St. Johns was frozen."

As to the formation of frost at Miami on February 11, 1912, as alleged by Mr. Palmer, it is sufficient to say that the minimum temperature at Miami on the date named was 51°.

Florida covers an area of about 6° in latitude. Winter storms of the southwest type occasionally dip far southward, and, when followed by "highs" of great magnitude, it is obvious that wide temperature ranges must be the sequence to the rapidly shifting areas of high and low barometric pressure. Be it remembered, however, that most of the cold waves that reach the gulf coast leave no icy touch over the lower peninsula. The great upper drift seems to pull the northern portion of our "highs" more rapidly eastward than the southern portion, thereby frequently converting what appeared, primarily, as an ominous condition into a harmless change of northeast winds and cloudy weather.

In contrasting Florida and California as winter resorts, Mr. Palmer was unfortunate in his citation of temperatures, and, inferentially at least, left the impression that California, during the winter of 1911–12, was the elysian field of climatic perfection. Invidious comparisons are not in good taste, but weather bureau records are paths that lead to truth, so let the record speak. Mr. Palmer states that 42° was the lowest temperature recorded at Los Angeles during January. Official records show, however, that 39° occurred on February 27, and 38° on December 31, 1911, and these figures represent a state of inversion, the temperature nearer the ground being 8° to 10° lower. In fact, Riverside recorded 21°, San Bernardino, 19°, and Redlands 24°, on December 26, 1911. The temperature of —2° at Tallahassee, Fla., in February, 1899, occurred during a condition that marked an epoch in the climatic history of the country. Tallahassee, however, is in the "hill country," quite 200 miles from the citrus belt. Coincident with the zero temperature at Tallahassee, were minima of only 24° to 28° in what is now an important section of the citrus belt.

Parenthetically, I will say there is no issue between California and Florida. Their inheritance and common destiny are the same. Florida rejoices in California's countless resources and great prosperity, and forsooth, she has learned a lesson from her business acumen and studied frugality. Aye, more. Florida is even willing to follow where California leads, provided the objective be unity and prosperity, justice and equality.

Florida's hopes and aspirations are not builded on the misfortunes of others, but, like California, they rest securely in the public's knowledge of her resources, and in the wonderful possibilities arising from a climate that offers success to the industrious, hope and comfort to the afflicted.

Florida, however, has her "ups and downs." The cold wave of December, 1911, so damaging to the Pacific coast, did not reach this state, but its counterpart is found in the cold waves of the '90's, which swept this section with great severity.

The matter of the weather recurring in cycles has not been established as a fundamental fact, Bruckner to the contrary, notwithstanding. The "long ranger" has spent his force, and until puny man is able to revolutionize the mechanics of the atmosphere, the rain-maker will continue to bombard space with negative results. Hence, we must continue to rely on that governmental agency, the weather bureau, for timely warnings of impending changes. Light-wood knots are still plentiful in Florida, and coal and oil seemingly so in California. The utilization of

these, supplemented by intelligent action, will circumvent, to a large extent, any lasting damage from even extreme boreal conditions.

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SCIENTIFIC BOOKS

The Life of Ellen H. Richards. By CAROLINE L. HUNT. Boston: Whitcomb and Barrows. 1912. Pp. xiv + 329.

It is seldom that a biographer is confronted with a more difficult task than that of bringing together in moderate compass a record of a life of such unremitting, aggressive and varied activity as that of Ellen Henrietta Richards. In this instance, however, both author and publishers have been inspired by warm, personal friendship to prepare a memorial which should give worthy expression to the ideals, purposes and deeds of this most remarkable woman, and the outcome is a volume which will gratify the legions of those who, because of personal contact or helpful inspiration, will always count Mrs. Richards among their friends.

The preparation of this memorial volume was undertaken, at the request of Professor R. H. Richards, through the cooperative efforts of a committee of nine of Mrs. Richards's intimate associates. They have gathered materials from many sources, including family records, letters from classmates, college associates, graduates and former students of the Massachusetts Institute of Technology, friends in all walks of life, and from the officers and records of the many organizations in whose activities she took a leading part. From this material Miss Hunt has prepared a most readable and interesting narrative. This she has subdivided into sketches, in separate chapters, relating, respectively, to Mrs. Richards's childhood, girlhood, college life (two chapters), her experiences as a student of chemistry, her laboratory work, her home life, her association with the Woman's Laboratory, her teaching by correspondence, the beginnings of euthenics, her work among and for college women, her activity as a missionary of science, her journeyings, her activities in connection with the Lake Placid Conference, and with the Home Economics Movement. The remaining two chapters of the book deal with the enlarged influence of the last years of her life and the fortunate perpetuation of that influence in the future through the continuation of the helpful activities which she organized and inspired, and which others are now maintaining with enthusiasm.

It is obviously too early to estimate accurately the full measure of what Mrs. Richards accomplished, but this disadvantage is more than offset by the opportunity to obtain accurate information at first hand from many reliable sources, and by the enthusiastic zeal of so many to do honor to the memory of one who had so recently been to them a source of inspiration and help.

Even to those most closely associated with Mrs. Richards, who witnessed her untiring energy and devotion to her work and her ideals, the story of her life, as told in this volume, must excite renewed wonder and respect. It is a singular record of severe and often disheartening obstacles overcome by patient purpose and ceaseless effort, inspired and supported by a breadth of thought and outlook which was distinctly in advance of the period in which she was working. This is strikingly true of her girlhood and young womanhood, where she was a pioneer in her undertakings with respect both to her own education and development and that of her fellow-women; and it is hardly less true of the work of her later years for the improvement of life in the community, and especially in the home. Her viewpoint had much in common with that which in other fields leads to the inception of large engineering operations of wide significance. Whether as teacher, investigator, organizer, missionary, companion or friend, her efforts were essentially constructive, and, while the results may lack something of the tangible permanence and glory which belong to the creations of the engineer, they are none the less abiding and real. It is a pleasure to note that two memorial funds, the proceeds of one of which is to be used for the endowment of research