(Pieris brassicae L) in den Vereinigten Staaten. Warum also nicht auch die Nützlinge?

Mr. A. D. Hopkins that wohl sehr gut, sein Augenmerk auf Europa zu richten.

Und in der That haben wir in Clerus formicarius L. einen Käfer, der nicht nur in seinem Aeusseren, in Grösse und Färbung, seinem amerikanischen Bruder, Clerus dubius F., überaus ähnelt, sondern dem Letzteren auch in seinen Lebensgewohnheiten gleicht. Er ist, sowohl als Larve, wie als Imago, ein scharfer Feind der Nadelholz-Borkenkäfer, gleichviel ob sie auf Kiefer oder Tanne leben, und dabei recht zahlreich.

Diesen wählte Mr. Hopkins zur Einführung nach Amerika.

Um sein Ziel sicher zu erreichen, setzte er sich mit dem durch seine klassische Monographie berühmten Scolytiden-Specialisten Eichhoff und mit mir in Verbindung und kam im August nach Europa, hier die Lebensbedingungen des Thieres zu studiren und zu sammeln.

Mr. Eichhoff schrieb mir, während Herr Hopkins im Elsass sammelte, dass derselbe "mit seltenem Geschick und grossem Glück" arbeite, und ich selbst konnte dies sehr bald aus eigener Anschauung bestätigen, als ich mit Mr. Hopkins gemeinschaftlich mehrere Tage in den sächsischen Wäldern auf Cleriden fahndete. Wir fanden die Larve in allen Stadien des Wachsthumes, die Puppe, die eben entschlüpfte Imago, und den kräftigen, lebhaften Käfer in ihrem kunstvollen Winterquartieren innerhalb der Rinde.

So kann denn Mr. Hopkins zufrieden auf den Erfolg seiner Reise blicken, denn er nahm eine stattliche Zahl Cleriden in allen Stadien, der Sicherheit halber in vertchiedener Weise verpackt, mit nach Hause. Und da es wohl keinem Zweifel unterliegt, dass der weitaus grössere Theil der in der Winterruhe befindlichen Thiere gesund ankommt,—wenn nicht übertriebene Cholerafurcht etwa Herrn Hopkins Schätze durch Disinfection verdirbt,—so kann im Frühjahre mit dem Acclimatisationsversuche begonnen werden.

Für genugenden Nachschub wird von mir eventuell gesorgt werden, um Mr. Hopkins's Experiment gelingen zu lassen.

COLIAS EDUSA AND COLIAS HYALE.

BY A. HEATH, LONDON, ENGLAND.

GREAT BRITAIN this year has been favored with an abundance of these beautiful insects; from every part come reports of innumerable captures, especially of *C. Edusa*, many insects being taken at one throw of the net. *C. Hyale* has also been, I may say, plentiful when we consider its comparative rarity here; friends of mine report taking during a few days as many as four or six this season. I have myself taken four fine specimens in as many days. The first specimen I took in June, but it was the only example of *Colias* that I saw until August; as a rule these insects are never taken in England until August. In 1886 we had a similar year; enormous numbers of *C. edusa* were to be seen, one entomological friend told me he had seen a certain field in Kent yellow with them. It seems most extraordinary that this year we should have had such an abundance of this particular insect, when last year scarcely one was to be seen even in their favorite localities.

Some entomologists believe that they come across the English Channel (over 20 miles of water) in swarms, but if this were the case, surely someone would see them arrive or on their arrival before they scattered over the country. Then, if this were so, why do we not get an annual visit in quantity? The insect is always in abundance on the continent of Europe, and there is also an abundance of many other kinds of butterflies that we seldom or never see here. My idea respecting these occasional abundant swarms is that butterflies' eggs are indestructible, and will lie on the ground for years until a favorable season arrives.

The eggs of *Colias* are laid on the food-plant, various forms of *Trifolium;* this is not only their food, but the food of every kind of four-footed animal, domestic and otherwise, inhabiting this country (except carnivora), and the whole field or crop of *Trifolium* is eaten either in a green or dry state. What, then, becomes of the eggs deposited? They must be eaten up almost entirely, and if not indestructible they would be destroyed. This seems not to be the case, and it is probable that they can pass through the animal uninjured by the heat of its body, and so be again distributed over the ground. Without some such theory it seems almost impossible to account for the large numbers found in a cultivated country following a year of scarcity like last year, especially when we remember the enormous number of larvæ destroyed by ichneumon and other countless enemies, bad seasons, etc.

NOTES AND NEWS.

THE New York Academy of Sciences has recently organized a biological section which will hold monthly meetings. At the opening meeting, Oct. 17, Professor Henry F. Osborn acted as chairman. The following papers were presented. Bashford Dean, "On Dionæa under its Native Conditions near Wilmington, N.C.," the results of experiments emphasizing the plant's erratic sensibility and its special adaptability for capturing ground insects; N. L. Britton, "On a species of Hieracium;" E. B. Wilson, "On the Artificial Production of Twins and Multiple Embryos in Amphioxus." The paper dealt mainly with the peculiarities of double monsters produced (as in Driesch's experiments on Echinus) by shaking apart the blastomeres of two- and four-celled stages (*v. Anatomischer Anzeiger*, 1892). Every gradation exists between two perfect and separate bodies, each half the normal size, and four in which the only indication of duality consists of a bilobed condition of the archenteron. In the double gastrulas the long axes of the two halves may form any angle with each other, and the two blastopores when separate may be turned in any direction. In cases where the two blastopores face each other, the two bodies are united by a bridge of tissue at one side, essentially as in the double gastrulas of certain earthworms.

— As cotton-seed meal is gradually coming into use in Ohio as a valuable adjunct to the ration for dairy cows, and as the scarcity and consequent high price of corn the present season may tempt some farmers to add this meal to the pig ration, it seems advisable to call attention to bulletin 21 of the Texas experiment station (located at the Agricultural and Mechanical College of Texas, College Station P. O.). In this bulletin Director G. D. Curtis reports the results of a long series of experiments in feeding cotton-seed to pigs, from which he comes to the conclusion that there is no profit whatever in feeding cotton-seed in any form to pigs, whether the seed be boiled, roasted, or ground. The ground seed seems to have produced the worst results, causing the death within six to eight weeks of a large proportion of the pigs to which it was fed, and especially of the medium and small-sized shoats. The boiled seed was less injurious, but roasted seed was almost as fatal as the meal. These pigs were fed alongside of similar pigs which had corn instead of cotton-seed, and the corn-fed pigs remained in perfect health. The symptoms produced by the cotton-seed are described as follows: The first sign of sickness, appearing in from six to eight weeks after cotton-seed meal is added to the ration, is a moping dullness of the animal, with loss of appetite and tendency to lie apart. Within the course of twelve to thirty-six hours, often within the shorter time, the animal becomes restless; staggering in his gait; breathing labored and spasmodic; bare skin showing reddish inflammation; sight defective, and both the nervous and the muscular systems feeble and abnormal in action. The fatal cases all show "thumps"—spasmodic breathing, and in many instances the animal will turn in one direction only, following a fence, or building wall, so closely as to strike his nose against projections in a vain endeavor to push outward in that one direction which he tries to take. If no fence or building intercept him he may travel in a circle—large or small according to the mildness or acuteness of the malady in his particular case. When exhausted by his efforts the animal drops down suddenly — sometimes flat upon his belly, sometimes dropping on his haunches with his fore legs well apart to keep from falling over — almost always with the evidence of more or less acute internal pain. At death a quantity of bloody foam exudes from mouth and nostrils.