cepted a position as dean and professor of the college of pharmacy at Valparaiso University.

DR. OTTO FREDERIC KAMPMEIER, professor of anatomy at the University of Illinois College of Medicine, has been appointed head of the department of anatomy to succeed the late Professor Victor E. Emmel.

DR. T. FRANKLIN SIBLY, the geologist, principal of the University of London, has been elected vice-chancellor of the University of Reading, in succession to Dr. W. M. Childs, who is retiring in September.

DISCUSSION

GIFT TO DOWN HOUSE OF THE ORIGINAL LETTERS OF CHARLES DARWIN TO FRITZ MÜLLER

AFTER a year and a half of correspondence Professor Osborn has succeeded in purchasing from the Müller heirs in São Paulo, Brazil, the originals of the entire series of letters from Charles Darwin to Fritz Müller, chiefly written from Down House during the period from August 10, 1865, to January 4, 1882. These precious letters, which are now on their way to the American Museum of Natural History by registered mail, have been lying in the safe of Dr. C. T. Stewart, president of Mackenzie College, São Paulo, Brazil, and were reported in December, 1928, by Director L. V. Coleman, of the American Association of Museums, as being in excellent condition. The find was rather surprising since we had been informed "that one of the Müller heirs had successfully carried out his intention of taking all the Müller correspondence to Germany some time ago."

At the time Francis Darwin was preparing the life of his father he secured from the Müller heirs very accurate typewritten copies of all these letters, from which he made more or less copious extracts for his four biographic volumes. The series of inquiries which Darwin addressed to Müller cover a very great variety of subjects but chiefly relate to the problems of mimicry and to the cross and self-fertilization of plants. Despite Darwin's very delicate health they are written with very great care. After the first letter of inquiry each succeeding letter opens with an enthusiastic word of appreciation. The letters are fifty-eight in number, and by comparison in the American Museum with Francis Darwin's "Life and Letters" (edition 1896) it has been found that the series contains the August 10, 1865, letter with which Charles Darwin opened the correspondence. Seven more of the Müller letters are quoted in whole or in part in Volume II of the "Life and Letters," and thirty letters are quoted in whole or in part in Francis Darwin's "More Letters of Charles Darwin" (edition 1903). Thus of the fifty-eight letters secured for the memorial collection in Down House, which was opened on June 7 as a national shrine to the great naturalist, there are thirty-eight wholly or partly published and twenty still to our knowledge unpublished. Of the great German naturalist with whom Charles Darwin had this long correspondence, Francis Darwin writes, "My impression is that of all his unseen friends Fritz Müller was the one for whom he had the strongest regard." A biographical note on Fritz Müller is given on page 382 (Volume I) of "More Letters of Charles Darwin." His full name was Dr. Johann Friedrich Theodor Müller and he was residing in Blumenau, Sa. Catharina, South Brazil, when Darwin was writing to him.

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A CASE OF ACCIDENTAL PARASITISM

DURING the spring of 1927 Dr. Parke H. Simer, of Illinois Wesleyan, was at Money, Mississippi, on the banks of the Tallahatchie River collecting parasites. This river joins the Yalobusha to form the Yazoo River, which empties into the Mississippi near Vicksburg. All the Cestodaria secured were kindly turned over to me, and all these were taken with but a single exception from members of the Catostomidae, or suckers. One new species, *Glaridacris confusus*,[1] presented some interesting infection data, so unusual, in fact, that it seems wise to present this note separately.

Glaridacris confusus has been reported from several localities and hosts. *Ictiobus bubalus*, the small-mouthed buffalo fish, harbored this parasite in the Rock River, Illinois, and in the Mississippi River near Fairport, Iowa. Dr. Simer collected this parasite from the same host in the Tallahatchie River as well as from several undetermined Ictiobus sp., and *Dorosoma cepedianum*, the gizzard shad. The parasite is by far one of the most common in this region, being present in twenty-five of thirty-four Ictiobus examined, or 73.5 per cent. In addition it has been frequently encountered in Illinois and Iowa from the same host. Yet it is found but once in *Dorosoma cepedianum*.

No light can be gleaned from the parasite itself concerning this infection since we do not know any of the stages in its life history. Let us therefore examine this unusual host, *Dorosoma cepedianum*. The most striking feature appears to be that the two hosts of this parasite, the buffalo fish and the gizzard shad, belong in two widely separated families, Catostomidae and Dorosomidae (Clupeidae), respectively. Accord-

[1] G. W. Hunter, III, "New Caryophyllaeidae from North America," in press.

ing to Hubbs[2] these belong in the same order, Malacopterygii, although the older workers placed these groups in different orders, Eventognathi and Isospondyli. Without going into the "pros and cons" of this question it is evident from the disposition of these families into separate orders that there are considerable differences between the two, both morphologically and physiologically. In the second place this constitutes the first record of infection of the gizzard shad by a Cestodarian parasite. All the other thirty-nine species of Caryophyllaeid parasites are found in members of the Catostomidae, Siluridae or Cyprinidae. Furthermore the infection is unusual because this fish normally harbors but few parasites. The author in collaboration with Essex examined 107 gizzard shad in 1925 from the Rock and Mississippi Rivers (the latter at Lake Pepin, Minnesota) and did not find a single infected specimen.[3] This dearth of parasitic fauna was explained by the fact that "The feeding habits of the gizzard shad seem to be such as to preclude the acquiring of an extensive parasitic fauna. Since it feeds largely on vegetable débris at the bottom of streams and lakes, very seldom ingesting animal food, there is little opportunity for parasites which have an extremely complex life cycle to find in it a suitable host." However, Van Cleave[4] in an examination of over three hundred gizzard shad finds a decided periodicity of infection by Acanthocephala; his examinations, being seasonal, show a decrease of these parasites during the summer months which explains why we did not find any Acanthocephalid infection. Dr. Simer examined fourteen of these from the Tallahatchie River. Only six possessed what a superficial examination classed as possible Cestodarian infection. Of these only one actually proved to harbor *G. confusus,* the other being plerocercoid larvae and Acanthocephala. By combining the records we have evidence of one case of infection by a Cestodarian, *G. confusus,* in over four hundred and twenty fish examined, or 0.23 per cent. From the statistical standpoint the evidence is overwhelming that this parasite is not naturally found in this host.

Dr. Simer was in Mississippi during the spring of 1927 when the flood waters were near their peak. This meant that the entire biological balance was upset, for both fishes and fish food were not only disturbed but even swept away. It is but a step further to visualize the gizzard shad, *Dorosoma cepedianum,* eating infected intermediate hosts containing *G. confusus* or securing direct infection if this method prevails, and thus becoming accidentally infected by this parasite. Surely the evidence at hand points to this as the only logical explanation.

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[2] C. L. Hubbs, "A Check-list of the Fishes of the Great Lakes and Tributary Waters, with Nomenclatorial Notes and Analytical Keys," Univ. of Mich. Mus. Zool., Misc. Pub. No. 15, 77 pp., 1926.

[3] Essex, H. E., and G. W. Hunter, III, "A Biological Study of Fish Parasites from the Central States," *Trans. Ill. St. Acad. Sci.,* 19: 151–181, 1926.

[4] H. J. Van Cleave, "Seasonal Distribution of Some Acanthocephala from Fresh-water Hosts," *Jour. Parasit.,* 2: 106–110. 1916.

CEPHENOMYIA SP. KILLING DEER

DUE to the severity of the winter and the excessive snowfall in the higher mountains the black-tailed deer, *Odocoileus hemionus,* of this region have been forced into the valleys, and have been fed regularly on the feed grounds with the cattle or on separate feed grounds or in feed racks. In the middle of January they began to appear on the lower foothills and occasionally in the fields where they visited the hay stacks. Regular feeding was started in early February and continued until they started moving back into the hills. The feed grounds below Gunnison were located at the Hillside School, about three miles below Gunnison, and at regular intervals down the river.

When the deer first came down they were practically all poor and weakened. Feeding restored their vitality on all grounds except at the Hillside School. On this ground it was noted that the young deer and some of the older failed to recover strength. During the latter part of February some of the young died. In early March the death-rate became much higher, and at the present time more than sixty deer have died. Autopsies showed conditions quite normal except in the head, where the larval stage of *Cephenomyia* sp. were found in abundance. Clusters of the larvae were found hanging attached to the nasopharynx in such masses as to almost completely stop the nasal passages. In one autopsy fifty-four larvae were taken. In this deer the tissues of the lower nasal passages were highly inflamed, and in the upper left sinuses infection had set in and had extended to the left lobe of the brain on which there was also a hemorrhage. These larvae ranged in size from a half inch long to mature larvae.

No early symptoms of infection were visible except a general weakness and emaciation. In the deer captured for the local park extreme restlessness was observed for twenty-four hours before death. In these cases (seven head) the animals died in what seemed to be extreme agony with the head severely drawn back toward the shoulders. On the feed grounds other than that at Hillside there have been only occasional deaths.