terial vehicle through which to act. . . . Like the other energies of nature, it does not act alone, etc."

The critic says, p. 439: "Recent utterances seem to show that all the criminals are not among the materialists, and that the dogmatism of biologists must be attacked at both ends of the line."

"In all seriousness we ask, what can fundamental disagreement among those who speak with authority lead to except disaster? Are we not bound to find first principles which will command the assent of all thinking men?"

I supposed it was an axiomatic truth that to have agreement only one man must do the thinking. However, progress has not been most rapid under such circumstances in the past. Perhaps, after all, the best possible antidote to the whole criticism of *Science or Poetry* is the review of Haeckel's Monism, entitled 'The tyranny of the monistic creed' (SCIENCE, N. S., Vol. I., p. 382). There seems in this review to be a protest against any one man setting up as the sole possessor of true doctrine. Here is one sentence from the review: "He (Haeckel) tells us all eminent and unprejudiced men of science who have the courage of their opinions think as he does." As the reviewer did not take kindly to this tyranny of monism, perhaps Haeckel would not include him among the elect in science, but rather would count him also among the poets.

S. H. GAGE.

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THE KATYDID'S ORCHESTRA.

TO THE EDITOR OF SCIENCE: The letter in the September 20th issue, from Mr. George M. Gould, seems to indicate that there is considerable ignorance concerning what are supposed to be elementary facts in entomology; and further, that the letter was not submitted to Mr. Scudder, the Entomological Editor, who is well posted in this matter. Mr. Gould asks, "Is Company A composed of males and Company B of females?" The solution suggested is an impossible one, because throughout the *Orthoptera* the females are mute and only the males are provided with stridulating organs. Furthermore, in speaking of the 'Katydid,' Mr. Gould seems not to be aware that we have at least a dozen species to which this name is applied. We have *the* 'Katydid' which is *Cyrtophyllum concavum*, which is most generally described, and which makes the typical 'Ka-ty-did' or 'Ka-ty-did'-nt' sound. This species, I believe, does not occur in North Carolina, and the insect to whose sound Mr. Gould has listened was quite a different species from the one that makes loud music in the Middle and Eastern States. The members of the genera *Microcentrum*, *Scudderia* and *Amblycorypha* are all 'Katydids,' all musicians, and each species has a different note. Some of the sounds made by the Locustidæ have been described and set to music by Mr. Scudder, and as a matter of fact every collector in this order soon learns to know, with a fair degree of certainty, exactly what species is making the sound. Mr. Gould's observations are interesting; but they will have very little value until we know of what species he speaks. It is quite certain that the true 'Katydid' is not the species intended.

JOHN B. SMITH.

RUTGERS COLLEGE, NEW BRUNSWICK, N. J.,
October 14, 1895.

Professor Smith is of course correct in taking Dr. Gould to task for suggesting that the female katydid may stridulate, but it is not by any means so sure that Cyrtophyllus (the true katydid) 'does not occur in North Carolina,' as believed by him; on the contrary it is at least highly probable that it does, for it is not only found 'in the middle and eastern States,' as he says, but has also been reported from Kentucky (Garman), South Carolina (Saussure) and Georgia (Brunner), as well as in the West from Illinois to Texas. Professor Smith speaks as if the other genera he mentions (which are *erroneously* called katydids) belonged in the same group with Cyrtophyllus, whereas the last belongs to a different family (Pseudophyllidæ) and is indeed interesting as the only genus of that family yet known in the United States, although the family is richly represented in Central and especially South America.

The antiphonal rhythm of the two 'orchestras' mentioned by Dr. Gould is very interesting and not altogether unlike what has been observed among crickets; but I am inclined to doubt the

reality of the asserted difference in pitch, because with these locustarians, at least to an untrained ear like mine, differences in distance and consequent sharpness of tone (which latter Dr. Gould specifically mentions) are accompanied by an apparent difference in pitch, which is lost on similar approximation. If Dr. Gould can find two choirs equally loud and distinct, or equally distant and free from intermediate obstructions, accompanied by a real difference in pitch, he should report his further investigations, and further determine precisely what insect is the source of the orchestration.

SAMUEL H. SCUDDER.

A NATURALIST IN MEXICO.

THERE has recently appeared a small volume by Mr. F. C. Baker under the above title which purports to be an account of the expedition of Yucatan and southern Mexico sent out by the Academy of Natural Sciences of Philadelphia in 1890, under the leadership of Prof. Angelo Heilprin. It is based presumably upon the author's notes and recollections of the trip.

As a member of this expedition I consider it my duty to correct several inaccuracies in Mr. Baker's statements, and especially to call attention to the manner in which quotations have been made from the scientific reports of the expedition and other works without a word as to the source of the information, leaving the reader to infer that it is the work of the author. In the preface it is true we are referred to the Proceedings, Acad. Nat. Sci. Phila., 1890–95, 'for full accounts concerning the scientific portion of the expedition,' but the author does not acknowledge any assistance from this source in preparing his volume and makes direct quotations without the slightest comment. His historic account of Yucatan is drawn from Stephens' 'Incidents of Travels in Yucatan,' Vol. I., Chap. iii., as a comparison will at once show, many of the phrases being identical.

Turning to page 80 of 'A Naturalist in Mexico,' we find an account of previous measurements of Mt. Orizaba. The source of this can easily be ascertained by referring to Prof. Heilprin's paper on the subject Proc. Acad. Nat. Sci. Phila., 1890, p. 253–254, as the following quotations will show:

BAKER.	HEILPRIN.
In 1796 Ferrer, by means of angle measurements taken from the Encero, determined the height to be 17,879 feet. Humboldt a few years later measured the mountain from a plain, near the town of Jalapa, and obtained 17,375 feet. He observed, however, that his angles of elevation were very small, and the base-line difficult to level, etc.	Ferrer in 1796, by means of angle measurements taken from the Encero, determined its height to be 17,879 feet. Humboldt a few years later measured the mountain from a plain near the town of Jalapa, and obtained only 17,375 feet, but he observes with characteristic caution that his "angles of elevation were very small, and the base-line difficult to level," etc.

Professor Heilprin very properly places Humboldt's statement in quotation marks, and refers in a footnote to his source of information. Mr. Baker, however, takes Heilprin's statement bodily and Humboldt's with it and uses no quotation marks nor reference whatever! The rest of the account is similar to the above example, but Mr. Baker unfortunately credits Dr. Kaska with making his measurements with a 'thermometer' instead of a barometer as stated by Professor Heilprin.

Immediately following the consideration of the height of the mountain Mr. Baker gives us an account of the birds observed at San Andres. This he has taken directly from my paper Proc. A. N. S., Phila, 1890., p. 213, though it is presented without any acknowledgment or marks of quotation. The following example is sufficient:

BAKER.	STONE.
The difference between the birds of San Andres and those of Orizaba 4,000 feet below, was marked. Only three species were common to both localities. Nearly all the species belonged to northern genera. In the town the only birds observed were the House Finch, Blue Grosbeak and Barn Swallow, etc.	The difference between the birds of this vicinity and of the town of Orizaba 4,000 feet below, was at once apparent. Only three species were seen at both places. * * * Nearly all the species belonged to more northern genera. * * * In the town itself the only birds observed were the House Finch, Barn Swallow and Blue Grosbeak, etc.

While accompanying the expedition mainly as a conchologist, Mr. Baker did render valuable assistance in collecting birds. The scien-