Joseph June 17, did not come from the mountains or even from Colorado. The various states of advancemet in growth at different points without regard to latitude, elevation, or climate, show that the broods are local, or were local the present year. Their invasions of the country east of the Rocky Mountains, as given in the December (1868) number of the *Am. Entomologist*, 1820, 1856, 1857, 1864, 1866, 1867, and 1868 (Taylor, Smithsn. Rep. 1858 adds 1855), show that they are not governed by any regular periodic habit or influence. Observation shows that ordinarily their habits on the plains are very similar to those of the Red-legged Grasshopper (*C. femur-rubrum*, De Geer). I am inclined to the opinion that damp seasons are unfavorable to their development (but I will not take time at present to give my reasons for this opinion).

Do they cross the plains from the mountains in one season? Or, does the same swarm travel this distance? I cannot answer positively, No; yet I am of the opinion that they do not. But it may be asked, "Upon what do you base this opinion?" 1. The opinion of those in Colorado with whom I conversed on the subject (yet it is but an opinion) is that no one brood travels more than thirty to fifty miles. 2. The distance is so great that it raises the presumption they do not, which must be rebutted by some proof, which, so far as I am aware has not been furnished—unless their appearance in Kansas from the west be taken as such proof. 3. As they depend upon the wind—near the mountains—to carry them, it is very likely they depend upon it on the plains. And as they are really battling against the wind during the flight, their progress is somewhat slow. Hence it would require a long-continued series of favorable winds to bear them so great a distance. (Be it remembered I have seen them flying only in the mountains, and on the plains near the base of the mountains). 4. If they alight on the plains, as they often do in the mountains when the wind suddenly ceases blowing, coming down like a pebble, their wings would be worn out by the cacti and rough plants, long ere they had traveled five hundred miles. 5. The swarms which come from the mountains to the plains near the base certainly do not proceed far eastward. What reason then have we for believing the next brood arising from their eggs will enter upon so long a journey?

But this matter cannot be settled until more facts have been obtained.

There appear to be several varieties, varying from a straw-color to a dark brassy or greenish-brown, the head and sides of the thorax often almost black, yet retaining all the other markings. Age appears to deepen the color.

Yours, etc., truly, C. THOMAS.

DE SOTO, Ills.

AN ENTOMOLOGIST CAUGHT NAPPING.

Americans, most of them having been raise in a timbered country, naturally consider that he normal condition of the earth is to be cov ered by forests of trees. Hence we can scarcely take up a scientific journal, without finding some ingenious new theory to account for the existence of our western prairies. These philosophers forget that, in the interior of Australia, on the Pampas of South America, and in the great African Sahara, you may travel for thousands of miles without seeing a single tree; and that it is no more the normal condition of the earth to be covered by a dense growth of woody plants, than it is to be covered by a dense growth of herbaceous phenogamous plants, or a thick carpet of lichens and mosses. To every soil and climate a peculiar vegetation is appropriated; and it is as ridiculous to say that trees are the natural and normal growth of the whole surface of the earth, as it is to maintain that twelve is the normal and natural number of a jury.

It is amusing to see how men who live in a grass country hold precisely the contrary doctrine to that held by those who have been reared in a timber country. "Grass especially," says the English entomologist, John Curtis, "is the NATURAL COVERING OF THE SOIL, which has been increasing in depth and bulk from the creation." (*Farm Insects*, p. 498). If Curtis had not been better informed in entomology than he seems to be in botany, his works would not find so many readers as they do. Entomologists and other specialists will generally find it the safest course not to meddle with subjects that they do not understand. "Let not the cobbler go beyond his last."

THE PROGRESS OF THE POTATO BUG.

An interesting account of the Colorado Potato Bug (*Doryphora 10-lineata*, Say), is given in some of the former numbers of the AMERICAN ENTOMOLOGIST. It states that, starting eastward from the Rocky Mountains in 1859, this insect had already in 1868 reached the southwest corner of Michigan, and Danville in Indiana, about the centre of that State; making its average annual progress about sixty-two miles. Another writer says that "the southern columns of the grand army lagged far behind the north-

ern columns." Last summer (1868), to my own knowledge, it had reached the south shore of Lake Superior, northwest corner of Michigan, where it abundantly manifested its presence in its usual destructive attacks on the potato. I have since learned that between the Potato Bug and the drouth of the early part of the season, the crop was well nigh ruined in that region. I shall not easily forget the appearance of one potato field I witnessed, on the lake shore, in northeastern Wisconsin, which was nearly covered with those pests in both the larva and perfect states. The lazy Indians, to whom it belonged, idly lounging in the sun, and probably ignorant of the noxious character of the insect, made not the slightest effort to stay the work of destruction.

Its march this summer (1869) through Michigan has been duly recorded, though, owing to various causes, not attended with the dire consequences anticipated, as the price of potatoes in Detroit would go to show, they selling here, last fall, at from thirty-five to forty cents per bushel.

HENRY GILLMAN.

DETROIT, Michigan.

A SO-CALLED "VULGAR ERROR" NO ERROR AT ALL.

It is the common belief among farmers that barberry bushes sometimes cause rust in wheat; and not long ago there was a very serious riot in a certain county in Iowa, because one of the citizens persisted in growing barberries, to the great detriment, as was insisted on, of his neighbors' wheat crops. The above belief is referred to in the following extract from the *Proceedings of the N. Y. Farmers' Club*, Sept. 14th, 1869:

INFLUENCE OF CERTAIN TREES ON CROPS.—E. B. Seelye, Hudson, Mich., says, in his opinion, rust in wheat is produced by the barberry bush.

Dr. Trimble—This is an old tradition that I have heard from a boy, but there is no foundation for the belief. Rust is produced by another class of causes.

S. Edwards Todd—I am of the same opinion, but I know there are hundreds of farmers who have a prejudice against the barberry on this account. But I have seen the finest crops of wheat growing close beside the bush spoken of.

It would seem, however, although the belief that barberry often causes a particular kind of rust on wheat has been for the last century very generally ridiculed by naturalists as a popular superstition, that for this once the naturalists are in the wrong and the poor despised and vilified farmers are in the right. Here is what Dr. Lütken of Copenhagen, Sweden, says upon this vexed question in the *American Naturalist* for December, 1868, (page 557):

Professor Œrsted continues his curious experiments, demonstrating that certain fungi, parasitic on different species of plants, and described as distinct genera and species, are in reality only *the alternate generations of one species*. * * * You will remember that the specific identity of *Puccinia graminis* and *Oidium berberidis* was in the like manner demonstrated some years ago through the almost contemporary experiments of De Bary and Œrsted; thus confirming the opinion for a long time fostered by farmers, but rejected as superstitious by most naturalists (Sir Joseph Banks excepted). on the obnoxious influence of the Barberry on the grain-fields.

"Bully for the farmers," we say! Scientific men are sometimes a little too apt to despise the observations of plain practical men as "unreliable and worthless." See for example Dr. Shimer's fling at the different State Entomologists for relying on the statements of mere "correspondents."* Now here, as it turns out, we have a clear case where the farmers are in the right and almost every naturalist has been in the wrong. Let us then humbly and meekly "confess the corn." Probably, if the farmers would use the pen as often as they use the plough, we should have plenty more such cases.

But we fear that we are "stealing the thunder" of the Illinois State Horticulturist by talking so long on the great mysterious Fungus Question. We shall, therefore, leave this matter for his final decision, in the hope that he will take care to give the farmers "a fair shake."

**Trans. N. Ill Hort. Soc.* 1867-8, p. 101.

POISONOUS QUALITIES OF THE COLORADO POTATO BUG.

As corroborative testimony of the poisonous character of the Colorado Potato Bug (*D. 10-lineata*, Say), we quote the following from the Spring Valley (Minn.) correspondence of the Winona *Republican:*

A number of cases of poisoning from the loathsome potato bug have recently occurred in this vicinity, which I think are deserving of attention. As many persons are in the habit of killing these bugs by mashing them with sticks, and sometimes even between their fingers, I will cite one particularly severe case, which, it is hoped, will serve as a warning to those who take either of the above "mashing" methods to rid themselves of these disgusting potato destroyers.

Mr. Calvin Huntley, residing about three miles south of the village, has spent considerable time during the past two weeks in his potato patch, killing the bugs that infest the vines, by mashing them between two flat sticks. One evening about a week since, he accidentally got some of the blood or juice upon his wrist. Thinking no harm would result therefrom, he paid no attention to it. On rising the next morning he experienced an itching sensation on