tana State University, filling the place of A. W. L. Bray, who is taking advanced work at Harvard University this year.

W. F. LUSK, formerly of the department of rural education in the University of Minnesota, has accepted a position as professor of rural education in Cornell University.

DR. THOMAS BYRD MAGATH (Ph.D., Illinois) has been appointed instructor in anatomy in the medical college of the University of Illinois, Chicago.

DISCUSSION AND CORRESPONDENCE

REPLY TO DR. BLEILE

DR. BLEILE, in his reply[1] to my criticism of his paper on the "Rôle of Boyle's law in clinical sphygmomanometry,"[2] takes me to task, as I see it, on account of four scores.

The first is that I criticised an "abstract" of his paper. He does not make it clear that this "abstract" was written by himself and was published in the *American Journal of Physiology*. Nor does he make it clear that it has been abstracted in *Physiological Abstracts* in the form that is accorded to all papers. My criticism, therefore, is of statements that have been put on record in two publications.

The second count is personal: to this I will not reply.

The third count is that I "completely" missed the point of his paper. I take it that he here refers to my understanding of *his* statement of Boyle's law in comparison with *mine*, which, as I say in my criticism, led me "to suppose that in my application of Boyle's law I have committed the mistake of making the relation between pressure and volume a direct instead of an inverse one." If Dr. Bleile did not intend to give this impression, he had the opportunity of saying so in his reply; but on this subject he remains silent. This is to be regretted all the more, because *Physiological Abstracts* makes exactly the same interpretation as I made. The whole abstract[3] there consists of this sentence:

> It is shown that the oscillations of pressure and volume always vary inversely, as required by Boyle's law, and contrary to what is implied in Erlanger's hypothesis.

In the fourth count he accuses me of changing somewhat radically some of the statements of my own paper. If this accusation refers to my quotations, I can only say that they are absolutely verbatim. If it refers to my "paraphrase," I must leave it to others, who are sufficiently interested to take the time to compare it with the original, to decide whether the sense of my original statement is altered in it.

The major part of Dr. Bleile's "Reply" consists of a painstaking mathematical proof of the admission clearly made in my "Reply," that

> I inadvertently employed . . . the pressures taken directly from the mercury manometer instead of the absolute pressures.

He here, therefore, proves, as I say in my criticism, that "the failure to express the pressure in absolute terms affects . . . only the *magnitude* of the change, not its *sign*." And if the sign is not changed, my thesis is substantiated, for, to repeat,

> My only object in invoking Boyle's law was to show that under the particular set of ideal conditions premised . . . the amplitude of the pressure oscillations, resulting from the filling and emptying of the artery, must *increase* as the compressing pressure increases from the diastolic to close to the systolic level.

Since my criticism was written, Dr. Bleile's full report has appeared.[4] In it he makes additional criticisms of my work, which likewise are practically irrelevant to the purpose of my paper or are made possible through conditions gratuitously imposed. I will discuss one of these criticisms in order to indicate their nature. Dr. Bleile says:

> Erlanger's deductions are: If a pressure now equal to the diastolic be applied during the diastolic phase in the artery, no oscillations will be produced in the manometer during the pulsations of inside arterial pressure. For, he [Erlanger] argues, if the inside pressure rises above the dias-

[1] SCIENCE, N. S., XLVI., 111, 1917.
[2] SCIENCE, N. S., XLV., 384, 1916.
[3] *Physiol. Abstr.*, II., 176.
[4] *Amer. Jour. Physiol.*, 1917, XLIII., 475.

tolic, the vessel is already completely filled, and being inextensible, can not expand further and therefore can not transmit the increase of inside or arterial pressure when it rises above the diastolic level. But I [Bleile] wish here to point out that if the pressure in the chamber is at the diastolic level and the pressure within the artery is also just at the diastolic level, then it does not at all follow that the artery must necessarily be filled with fluid. Since the artery is readily collapsible (though not elastic) it may be only partly filled, or it may be entirely flat and empty. It may be in any degree of fulness or emptiness. But one must know the amount of fluid within the artery before he can tell whether a rise in arterial pressure will be transmitted to the chamber. As a matter of fact, not unless the artery is completely filled with fluid at the diastolic pressure and the chamber pressure just equal to it is applied without allowing the artery to collapse the slightest amount, can the result obtained by Erlanger be possible.

In order to bring clearly before the reader the three sets of conditions described in the foregoing quoted paragraph, I analyze them here into the form of a table. In this table

Conditions	Initial Compressing Pressure	Initial Arterial Pressure	Compressing Pressure Increased to	Arterial Pressure Raised to	Resulting Compression Oscillation
Erlanger's.	Atmospheric (1)	Diastolic (2)	Diastolic (3)	Systolic (4)	None
Bleile's 1st.	Diastolic (1)	Diastolic (1)	No change	Systolic (2)	Any amplitude
Bleile's 2d.	Atmospheric (1)	Diastolic (2)	Diastolic (3)	Systolic (4)	None

the numbers indicate the sequence of events. It thus is made obvious that Dr. Bleile's second set of conditions is merely a repetition of mine. And he admits that under his second set of conditions there will be no oscillations, which, it will be noted, is exactly the conclusion I came to. This result can be altered only by supplying energy not included in my premises. To be sure, no one can find any fault with the conclusion Dr. Bleile is led to by his first set of conditions, but they are not the set of conditions I chose to start with in developing the theory of compression oscillations.

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THE CORRECT NAME FOR OUR APPLE-GRAIN APHIS

Much confusion has existed in regard to the name applied to our apple-grain aphis. In the first place the name *avenæ* which is now applied to this species in America was for many years applied to *Macrosiphum granaria*. These two species were eventually separated and *granaria* applied to the *Macrosiphum* on grains and grasses and the name *avenæ* restricted to the present species or group of species on the same plants.

To the apple-grain aphis on its primary host the name *mali* Fab. was applied. This name, *mali*, is, however, a synonym of *pomi* DeGeer, a species which was not well known in America. The alternation between grains and apple was worked out while the name *mali* was still in use for the species. When *pomi* became better known it was shown that the present species was not *mali, i. e., pomi,* but was in reality the same species as the so-called *avenæ* on grains. *Pomi* was then restricted to the true *pomi* and *avenæ* transferred also to the apple-feeding form of this grain aphid.

Fitch described a species under the name *prunifoliæ* which he found upon the plum. In this description he gave the characters of some specimens collected and placed in his cabinet. These specimens are now in the National Museum collection and show that the species he had was the one treated in this note. Before publication, however, he observed some other specimens on plum and these had a black spot on the abdomen. He therefore included in his description remarks on this spot. His specimens, however, show that he really had the apple-grain aphis in his collection and in his manuscripts as *prunifoliæ*.

On account of his mentioning this spot subsequent writers considered his specimens to be specimens of *pruni* Koch. This latter species has been shown to migrate to thistles and in reality to be a synonym of *cardui* L. Therefore recent writers have considered Fitch's *pruni-*