

These men were aware of their ability to earn an ample sustenance in the world, and did not care to release their liberty and undergo whatever indignities might be cast upon them in a military organization. Twice recently intelligent sergeants of the signal corps have said to me that "for the salaries paid to our observers we could obtain some of the most intelligent men in our city: whereas we now have to put up with much less effective work." One of these told me of an assistant in his office who, on a very clear night, recorded the Milky Way as thin clouds moving slowly from the west. Of course, such men in the signal office as fear that they would lose their position by the transfer of the bureau to civilian control are bitterly opposed to the change, and several have given me this very reason for opposing the transfer.

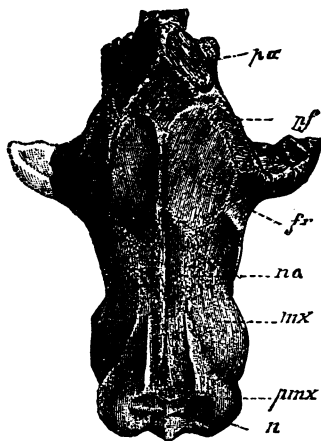
That this communication may, in the present crisis, do something toward influencing the change to civilian control, which I believe so much needed, is my earnest hope.

H. HELM CLAYTON.

Blue Hill meteor. observ.,  
Jan. 30.

### The pineal eye in *Tritylodon*.

The accompanying cut represents the top of the skull of the remarkable mammal *Tritylodon* Owen. It is reduced to two-thirds natural size, the genus being much larger than any other hitherto known from the mesozoic period. In the interval between the parietals and frontals, *pa* and *fr*, is seen the parietal foramen, *pf*, which has exactly the same position and relations as in the lizard genus *Sphenodon*. In my communication to *Science*, Jan.



28, I spoke of this foramen which lodged the pineal eye "as greatly exceeding that of any of the recent lizards in relative diameter." I find, upon examining the *Sphenodon* skull, that this is a slight exaggeration, and for the words 'relative diameter' should be substituted 'actual diameter.' Even with this limitation, the fact is of remarkable interest, and adds to the rapidly accumulating evidence for the reptilian ancestry of the mammals.

HENRY F. OSBORN.

Princeton, Feb. 1.

### Simple qualitative test for artificial butter.

Professor Scheffer (*Pharm. Rundsch.*, 1886, iv. 248) has proposed the following test for distinguishing between genuine and artificial butter: a mixture is made containing 40 volumes of rectified amyl-alcohol and 60 volumes ether of .725 specific gravity at 15°. One gram of butter-fat is dissolved in 3cc. of this mixture at 26-28°. On the other hand, 1 gram lard requires 16cc. of the solvent, 1 gram tallow 50cc., and 1 gram stearin 550cc. For the experiment take a test-tube of 12cc. capacity, and place in it 1 gram fat, add 3cc. of the fusel oil-ether mixture. After tightly corking the tube, put it in a water bath of 18°, and with frequent shaking bring the temperature to 28°. If the butter is pure, the solution becomes perfectly clear at this temperature. If not clear, more of the solution can be run in out of a burette, and the additional quantity required will be some indication of the quantity or quality of the adulterant which has been used.

According to Scheffer, mixtures of pure butter and lard gave the following data:—

Butter.	Lard.	Quantity of mixture required.
1 gram	—	3.0cc.
.9 "	.1 gram	3.9 "
.8 "	.2 "	4.8 "
.7 "	.3 "	5.7 "
.6 "	.4 "	6.5 "
.1 "	.9 "	14.4 "

A trial of this method has shown that it is capable of giving valuable qualitative indications as to the purity of the sample under examination. I believe it is the best simple test, capable of general application, which has been proposed. I have adopted a simpler method of getting sensibly constant weights than the one recommended above. The butters or substitutes to be examined are melted and filtered in the usual way to remove salt, water, etc. A 1cc. pipette is used to measure out the fat, which will be sensibly .9 of a gram. All the graduated apparatus necessary for this test is, therefore, a 1cc. and 3cc. pipette.

The theory of the test is, that tri-stearin is less soluble in the amyl-ether mixture than the other butter-fats, and that the fats used as butter-substitutes contain more of this substance than pure butter. The test is chiefly valuable for its simplicity and wide application.

H. W. WILEY.

Washington, Jan. 28.

### German constructions.

I should like to ask your correspondent, Mr. Eggert, if he supposes there exists any other language admitting of so horrible a construction as the placing-together of *six* pronouns in immediate contact?

"O du der du mich dem ich so zärtlich liebe!"

It is true that German writers of to-day show a material gain in clearness over most of those who wrote a hundred years ago, and this is doubtless owing to the increased familiarity of educated Germans with the shorter sentences and less parenthetical forms of construction used in English and French.

M. CAREY LEA.

Philadelphia, Jan. 27.