DISCUSSION

ANGIOTONIN OR HYPERTENSIN

IN a letter to SCIENCE, Page, Helmer, Plentl, Kohlstaedt and Corcoran[1] suggest the term "renin substrate" (α 2 globulin) for hypertensinogen or renin-activator. Uniformity of terminology would be desirable, as it has become rather confusing, due to the fact that some substances have several names as follows:

Buenos Aires group	*Indianapolis group*	*Lewis and Goldblatt*[4]
Hypertensin	Angiotonin	Hypertensin
Hypertensinogen	Renin-activator	Hypertensinogen
Hipertensinase	Angiotonase[2]	Hypertensinase
No equivaent	Angiotonin-activator[3] Angiotonin-inhibitor[3] Renin-inhibitor[3]	No equivalent

The last three terms have no equivalent in the Buenos Aires group terminology because the existence of the substances or actions implied have not been conclusively proved.

As to which term should be used, angiotonin or hypertensin, it is a matter of personal judgment. No priority can be claimed by either group, as the discovery of this substance was practically simultaneous.

The objection against hypertensin because it "implies a participation in hypertension and an effectiveness in hypotension" would perhaps be valid for commercial use, a point which we have never considered. The term hypertensin appropriately describes its action of increasing blood pressure and, as Lewis and Goldblatt[4] point out, "if it is eventually proved" to be the "cause of the elevated blood pressure, then the specific term hypertensin . . . will be more pertinent than the non-specific term angiotonin." That it has a definite and important participation in renal experimental hypertension is, we believe, unquestionable.

The terminology of the Buenos Aires group "in which renin the enzyme acts on hypertensinogen . . . to liberate hypertensin(e) the vasoconstrictor (and pressor), which may be destroyed by hypertensinase, has a clarifying unity which, in a sense, is lacking to the parallel succession of renin, renin activator, angiotonin and angiotonin inhibitor."[5] To us it has the advantage of being simple, logical, of forming a homogeneous group and of describing the action or origin of the substances.

The term renin-activator should be abandoned because it conveys an erroneous idea. The term hypertensinogen is perfectly correct: in fact, the suffix "ogen" is used to denote "giving rise to" (glycogen gives glucose, fibrinogen, fibrin, caseinogen, casein, etc.). As to the new term proposed "renin substrate (α 2 globulin) it should be pointed out: (1) that the enzymatic nature of the reaction has not "been established beyond a doubt."[1] There are several facts which make it probable, as we have repeatedly pointed out. But the matter can only be settled by experimenting with known concentrations of the pure substances. The fact that reaction approximately follows the equation for a first order reaction[6] can not be taken as a proof. (2) Moreover, if renin is really an enzyme, it might act on more than one substrate. For instance, pepsin acts on many proteins and calling one of them pepsin substrate would not identify it. (3) Adding another term (α 2 globulin) which describes its electrophoretic behavior would not help much. Moreover, it is not yet known whether hypertensinogen is all or part of the α 2 globulin fraction of serum, or only accompanies this fraction, and it remains to be proved that this fraction always contains hypertensinogen.

The addition of a new long and not too happy term for a substance, which has already four, would hardly simplify the terminology.

E. BRAUN MENENDEZ
J. C. FASCIOLO
B. A. HOUSSAY
L. F. LELOIR
J. M. MUÑOZ
A. C. TAQUINI

THE TRIPTANE PROCESS

TRIPTANE is the most powerful hydrocarbon known for use in internal combustion engines. Its antiknock properties are of such magnitude that no commercial engine has been built which is capable of utilizing the full power value of pure triptane. When used as a component of aviation gasoline, it greatly enhances the performance of present-day aircraft engines and makes possible the design of future engines of even greater power and efficiency.

Although its existence has been known for years and some of its physical properties have been determined, triptane has been a laboratory curiosity because the known methods of producing it involved the classical but impractical Grignard reaction, or zinc di-methyl as a reactant. Reported costs for producing triptane in very small amounts in the laboratory by

[1] I. H. Page, O. M. Helmer, A. A. Plentl, K. G. Kohlstaedt and A. C. Corcoran, SCIENCE, 98: 153, 1943.
[2] I. H. Page, O. M. Helmer, K. G. Kohlstaedt, G. F. Kempf, A. C. Corcoran and R. D. Taylor, *Ann. Int. Med.*, 18: 29, 1943.
[3] I. H. Page and O. M. Helmer, *Jour. Exp. Med.*, 71: 495, 1940.
[4] H. A. Lewis and H. Goldblatt, *Bull. N. Y. Acad. Med.*, 18: 459, 1942.
[5] Editorial. *Jour. Am. Med. Asn.*, 120: 923, 1942.
[6] A. A. Plentl and I. H. Page, *Jour. Biol. Chem.*, 147: 135, 1943.