TABLE 1. "Correct" analysis of variance of data reported by Hurder and Sanders.

Source		df	Sum of squares	Mean square	Variance ratio	p
ACTH	(A)	1	249	249		
Test	(T)	1	2	2		
Susceptibility	(S)	1	215	215	10.0	0.01 –
A × T		1	263	263	12.3	.001 –
A × S		1	1	1		
T × S		1	86	86	4.0	.05 –
A × T × S		1	67	67	3.1	.1 –
Within groups		72	1540	21.4		

ACTH and test, and (4) a "highly significant" main effect of susceptibility if the test-susceptibility interaction is considered to be merely a result of sampling variation. Hurder and Sanders concluded that ACTH, susceptibility, and the three-factor interaction were "highly significant."

The erroneous analysis of variance evidently resulted from errors in computing sums of squares for the various interactions. Such errors could have been detected by noticing that the two-factor interaction mean squares are significantly small compared to that for three-factor interaction. This could be a chance result, but will usually lead to detection of errors in arithmetic.

Several biological questions are raised by the correct analysis of these data. Probably the least is whether susceptible animals have larger adrenals than nonsusceptible animals, or whether a difference develops in a few days after audiogenic seizure. The lack of an ACTH effect (in a few hours) on adrenal weight in untested animals is concordant with the present state of knowledge, so far as I am aware. Hence there might be considerable interest in learning how ACTH could affect adrenal weight of animals subjected to seizure tests, remembering the short time in which it could act (20 hr from first injection to death, and only 10 hr from seizure test to death). Lastly, there is the question of how the seizure test can cause a decrease in adrenal weight, a result that appears discordant with other knowledge of such phenomena. Perhaps Hurder and Sanders are already at work on these questions.

HORACE W. NORTON

Agricultural Experiment Station
University of Illinois, Urbana

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A Correction and Additional Observations

INTERPRETING the revised analysis by H. W. Norton, we regard the interaction between seizure test and ACTH as the only statistically significant interaction. The sequence, audiogenic seizure (hereafter designated AGS), ACTH, final AGS, was peculiarly effective in increasing adrenal weight. Reference to the table in Norton's communication reveals that ACTH alone did not produce a significant increase in gland weight, when the ACTH effect is evaluated in the light of the interaction of ACTH and seizure test. It will further be noted that the variation in adrenal weight attributable to AGS susceptibility is statistically significant. This is as reported in the original article.

A study that introduces data relevant to the present interpretation of our first research has now been completed in our laboratory by W. J. McGovern and will soon be published. In this experiment, 56 40-day-old hooded rats were classified as AGS-susceptible or nonsusceptible, and then further divided into subjects receiving ACTH injections for 5 days (6 mg standard ACTH per day) or receiving equivalent water injections. All injections began 4 days after the initial AGS test, and animals were retested for AGS susceptibility on the 5th day of injection. Except for these details, the procedures of this experiment were the same as those of phase A of the original study.

The 5-day ACTH regimen produced no significant change in AGS incidence. The adrenal glands of these rats were removed 10 hr after the last AGS test. The percentage body weights of these glands are presented in Table 1, for comparison with similar data from the rats of phase A of the original study.

TABLE 1. Means and standard deviations of percentage body weights of adrenal glands.

	Susceptible			Nonsusceptible		
	Mean	S.D.	N	Mean	S.D.	N
ACTH-6 mg	0.0405	0.0037	10	0.0331	0.0050	10
Water	.0313	.0042	10	.0280	.0027	10
ACTH-30 mg	.0373	.0057	14	.0303	.0037	14
Water	.0280	.0046	16	.0278	.0059	12

An analysis of variance of these new data indicates that the interaction of ACTH and susceptibility is statistically significant (1-percent level). Neither ACTH nor susceptibility *alone* is a significant source of adrenal weight variation, although the ACTH means are larger than their control means and the susceptible means are slightly larger than their control means. A striking similarity of the relations among the means of the rats of this study and those of the rats of phase A of the first study is apparent in Table 1. In the absence of a phase B in the 5-day ACTH experiment, we cannot extract from the data the effect of the final AGS. It is our guess that this interaction of ACTH and susceptibility with extended ACTH injections is another instance of the effectiveness of the AGS, ACTH, AGS sequence in increasing adrenal weight. However, neither of these researches permits an answer to the question whether a sequence of ACTH, AGS might not be sufficient to produce a significant increase in adrenal weight.

Our first report raised, but did not answer, the question whether the significantly large adrenal glands of rats susceptible to AGS preceded or followed AGS.

The data of the 5-day ACTH study suggest an answer. Were susceptibility, independently of any immediate effect of the seizure, associated with heavier adrenals, one would expect to find evidence for this in the 5-day ACTH study.

We are grateful to Dr. Norton for having called our attention to an error that had actually reduced the amount of information available in the raw data of our original research.

WM. P. HURDER
A. F. SANDERS

Louisiana State University
Baton Rouge

Received February 17, 1954.

Water Resources of the Louisville Area, Kentucky and Indiana

A study recently made by the U.S. Geological Survey indicates that the potential water supply from both surface and ground-water sources in the Louisvills area, Kentucky, is more than sufficient for present needs.

Use of water in the Louisville metropolitan area for all purposes amounted to 765 million gallons per day (mgd) in 1952. Of this amount, 34 mgd came from wells and 731 mgd was withdrawn from streams. Of the 731 mgd, 659 mgd was untreated Ohio River water used by industries for cooling.

In certain parts of Louisville where ground-water supplies are being used, the present use of about 30 mgd could be increased only slightly. However, northeast of Louisville, about 280 mgd of ground water could be developed in a 6-mi strip along the river between Harrods Creek and Zorn Avenue. This water, if developed, would be induced infiltration from the river and would be suitable for industrial or domestic use.

Southwest of Louisville, the water available in sand and gravel deposits is about 12 mgd, and about 40 mgd could be developed in addition by induced infiltration from the river. Although detailed information is not available for the Indiana side of the river, additional supplies can probably be developed near the river northeast of Jeffersonville. The area north of Utica Pike is not considered favorable for development of large quantities of ground water, because of the high elevation of the bedrock.

Water from wells in the sand and gravel is of better quality than water from wells in the limestone. The average hardness of water from 15 wells in limestone that have been sampled annually since 1944 is 580 parts per million (ppm). In 1952, the average hardness of water from wells in sand and gravel was 475 ppm. The quality of the water in the sand and gravel is affected by the type of underlying bedrock. For example, water from sand and gravel over the limestone is harder than water from sand and gravel overlying shale.

The daily flow of the Ohio River at Louisville will drop as low as 2600 mgd on the average of once in 20 yr. Present use is 730 mgd, or 29 percent of 2600 mgd. Most of the water is returned to the river and is available for reuse downstream.

The river will reach a stage of 445.5 ft above mean sea level at the upper gage at dam 41 on the average of once in 20 yr. Normal pool stage is 420 ft. Most floods occur in the 4-mo period January through April, and all high floods have occurred during those months.

Considerable variation in the chemical quality of Ohio River water at Louisville is caused by changes in volume of flow, industrial and domestic pollution, and other factors. Ohio River water at Louisville is moderately hard. During 1952, the hardness ranged from 270 to 58 ppm, and averaged 119 ppm.

The small streams in the area are not important as major sources of water; however, Harrods Creek and Pond Creek are each capable of supplying about half a million gallons per day.

M. I. RORABAUGH
F. F. SCHRADER
L. B. LAIRD

U.S. Geological Survey
Louisville, Kentucky

Received March 16, 1954.

Zoological Nomenclature

NOTICE is hereby given that the International Commission on Zoological Nomenclature has under consideration the following case involving the possible use of its Plenary Powers: *Caenisites* Buckman, 1925 (Class Cephalopoda, Order Ammonoidea), proposed suppression of. Full particulars of this case are given in part 12 of volume 6 of the *Bulletin of Zoological Nomenclature*.

Any comments should be sent to me as soon as possible and, in any event, should be dispatched in time to reach this office not later than August 26, 1954, when voting on this case will begin.

FRANCIS HEMMING
Secretary to the International Commission on Zoological Nomenclature

28 Park Village East
Regent's Park, London, N.W.1

Received March 1, 1954.

Structural and Igneous Geology of the La Sal Mountains, Utah

Part of the effort of the U.S. Geological Survey is devoted to such basic questions as the ultimate source of the metals contained in mineral deposits. The search for new deposits and for extensions of old ones would be greatly facilitated if we understood the source of the metal and why it happened to be deposited where we find it. Basic questions of this sort prompted the decision to map and study the structural and igneous geology of the La Sal Mountains.

The La Sal Mountains include three of the 15 laccolithic mountain groups on the Colorado Plateaus. These 15 centers of igneous activity seem to represent