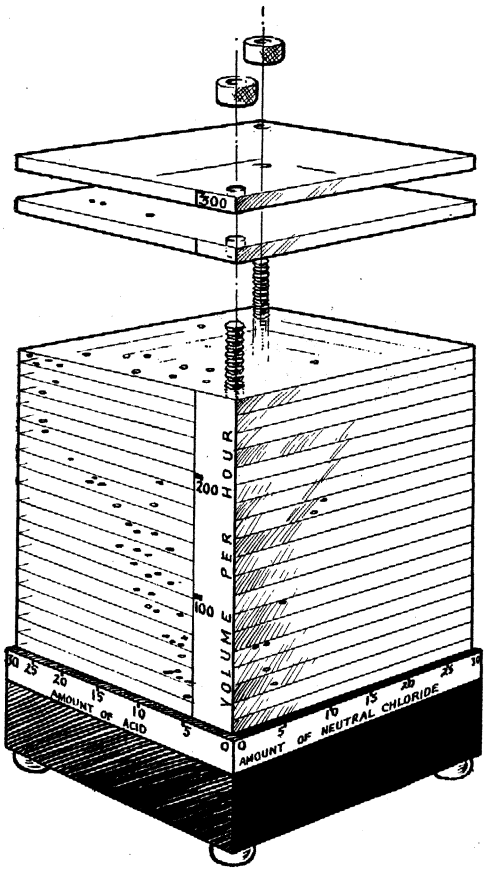

FIG. 1.

the data, previously classified, can be put into the block quickly and cleaned out again with alcohol when it is no longer required.

Inspection of data through the top face of the block allows a quick appreciation of the relationship between and among the variables and may suggest the type of statistical analysis to be used. The block also has value in demonstrating the meaning of three- and four-dimensional regression equations to those without formal statistical training.

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Unscientific Reporting

THE problem of getting accurate information to the public is frequently complicated by the changes and distortions of the newspapers. The following case history is an example.

In a telephone interview with a reporter of the Baltimore *Sun*, I stated that there are about as many cats as rats in Baltimore and, among other things, that cats eat few rats during a year. When the story appeared in the February 22, 1952, issue of the *Morning Sun* the headline read: SCIENTIST BLAMES LAZY CATS FOR CITY'S LAG IN RAT RACE. The story was picked up by other papers, and I received abusive letters or cards accusing me of being unfair to the rat-catching abilities of our feline friends. The latest (probably not the last) version appeared in the *New York Times Magazine* (April 6, 1952), as follows: "Dr. David E. Davis, Johns Hopkins School of Hygiene and Public Health: 'Baltimore cats are just plain lazy. If the cats would catch just one rat each, the city's rat problem would be solved'." Note that quotation marks were used around a reporter's version of a headline writer's version of a reporter's version of what I said over the telephone!

Fortunately in this case the distortion caused no bad consequences and did no harm. But how can accurate information be transmitted to the public without distortion? This amusing case history is trivial, but the problem of accuracy in transmisison must be solved.

DAVID E. DAVIS

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Baltimore, Maryland

UPON reading the article "Reporting Science," by Frank Carey, in your April 18 issue, it occurred to me that at least three news items that appeared rather recently in the press as if they were very new indeed could have been "cut down to size" by the addition of background information easily obtained by a few telephone calls to local scientists.

The article in which the use of synthetic resins as a substitute for distillation in the purification of water should have included the information that the discovery, which was the subject of the item, was merely an improvement on rather old fundamental work.

The article on a new cancer cure (zinc chloride) would have been more enlightening had the information been added that the AMA listed this cure in the cancer section of *Nostrums and Quackery* at least thirty years ago.

The big news about seeding clouds with dry ice to initiate precipitation should have included the information that three airplanes had in 1930, in Holland, seeded clouds with solid carbon dioxide for the same purpose, and that the results at that time were said to be promising.

Supplementary material of this nature would have improved the articles or ruined them, depending upon the point of view.

NORRIS M. ERB

Riviera Beach, Maryland

CONCERNING Baltimore's cats and rats, if the doctor was misquoted as he says, then there's NO excuse. It was just poor reporting by a man who would probably do a poor job on any kind of a story, science or otherwise.

I have no doubt that such things occur every now and then—and I made no claim in my article that every science story in the news is always accurate. I did point out that the men who are doing science day

in and day out on the news run bend over backward to make their stories accurate. And that would be true, also, of the *good* nonscience reporter. Newspapers, especially really good ones like the Baltimore *Sun,* have ways of finding out the inaccurate man.

As to the *New York Times Magazine* allegedly manufacturing or synthesizing quotes . . . well, there's NO excuse for that, either, but I'll bet the *Times* would raise the devil with the reporter if they knew about it!

As for background material, the first question that arises is: How much information was given by the sources of these stories—presumably scientists themselves? The scientist has the first obligation to include all data pertinent to the report he is making, and if he intentionally leaves out any historic background that might be important, his is the primary blame. If a reporter gets a story from a man with a good scientific reputation, he would naturally assume that he was getting the truth as the scientist saw it. Of course, if it were an obviously controversial subject, a good reporter would seek comment from possible dissenters. If a story emanates from questionable sources, the reporter has a distinct obligation to check on it. If he doesn't, he shouldn't be in the business.

Next question: On the "zinc chloride" story, did your correspondent or the AMA take the trouble to write in to papers pointing out that the "cure" had been listed in *Nostrums and Quackery*? It seems to me that he should have done so—and that papers would have been glad to print what he said on its news merits.

FRANK CAREY

Associated Press
Washington, D. C.

Periodic Acid-Schiff Reaction of the Insect Cuticle

HOTCHKISS (*1*) described the use of periodic acid as a histochemical reagent. It has the property of reacting with the α-glycol (—CHOH—CHOH—) group, rupturing the bond between the two carbon atoms, and converting the two alcoholic groups to aldehydic groups. Insoluble compounds containing the α-glycol group can be located in tissue sections by the use of periodic acid followed by Schiff's reagent, which gives a colored reaction product with the aldehyde that is produced.

Hotchkiss supposed that the majority of periodic acid-Schiff (PAS) positive substances that are likely to be present in tissues would be polysaccharides. Richards (*2*), on applying the test to the insect procuticle, found that the result was not always positive and postulated that the chitin, being a polysaccharide, must be "masked." The chitobiose units, which constitute chitin, however, are substituted in such a way as

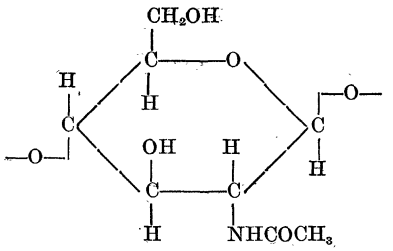

FIG. 1. Structural unit of chitin (after Meyer [*3*]).

to contain no α-glycol group (Fig. 1), and there is therefore no reason to suppose that chitin should give a positive PAS reaction (*4*). "Purified chitin" (i.e., cuticle after treatment with hot 10% NaOH solution) does give a positive reaction (*2*), because the alkali deacetylates the chitobioses. Since the PAS test was first introduced, it has been shown that a positive reaction is also given by the α-amino-β-hydroxy (—CHOH—CHNH$_2$—) group (*5*), so that whether or not the amino group (as well as the acetal-group) is removed from the chitin by alkali treatment, it could be expected to give a positive result in the PAS test.

To say that polysaccharides are present in tissue which is PAS-positive is not necessarily a valid conclusion. Having obtained a positive reaction with the epicuticle of a number of insects, Richards (*2*) has claimed that polysaccharides are present there, in the face of much biochemical evidence to the contrary; but it has been shown that the cells of the right colleterial gland of *Periplaneta,* which produces the phenolic substance that tans the ootheca, contain polysaccharide-free granules that are PAS-positive (*6*). From Pryor's work (*7*), it is reasonable to infer that substances similar to those found in the right colleterial gland are likely to be found also in the hardened regions of insect cuticle; and if one makes this inference, the more reasonable conclusion is reached that it is the phenolic cuticular tan, and not a hypothetical polysaccharide, which gives the positive PAS reaction in the epicuticle.

Lillie (*8*) has shown that the contents of the cells of the mammalian adrenal medulla are phenolic and are PAS-positive; the same situation prevails in the colleterial gland and is described elsewhere in detail (*6*).

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