group, but we stated that it is commonly believed that the neutralization involves the hydroxyl group attached to the third carbon. We should also have added that with neutralization of this enolic hydroxyl group by sodium, the lactone ring of the ascorbic acid remains unbroken unless excess of sodium is added. The values found for carbon, hydrogen and sodium in the analysis of our sodium ascorbate are in agreement with the theoretical values calculated for the sodium lactone salt.

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In Defense of the USDA Research Administration

Although parts of the curious paper by W. Gordon Whaley, "The Agricultural Impasse" (*Science*, July 22) are obscure, others suggest serious deficiencies in the Research Administration of the Department of Agriculture. If believed, these statements might reduce the effectiveness of this administration's work.

Certainly the research bureaus of the department, including the Bureau of Plant Industry, Soils, and Agricultural Engineering, which Mr. Whaley finds especially deficient, have many administrative problems—in fact, most of those he mentions. But the inference that these problems go unrecognized is not so. Fundamental as well as applied research is encouraged. Many projects are suggested by junior scientists. Ranks and salaries of strictly research scientists can be (and some are) as high as those of division chiefs and assistant chiefs of bureau.

Scientists need the freedom essential for effective research, but they are not an elite class—Congress must have ultimate control of public funds. The reports of annual hearings have their bad spots; they also have many good ones. The problem is to improve the relationship, not to avoid it.

The administrative and personnel problems of the Agricultural Research Administration that Mr. Whaley touches on are far more complex than he has had an opportunity to appreciate (else he would not call the task "dignified pussyfooting"). As in any other research group, the problems keep coming. The question is, how are they handled? Mr. Whaley thinks they are handled very badly; I think they are handled well.

Possibly Mr. Whaley conceives of research in terms of many small independent projects. There are some of these. But agricultural scientists must address themselves increasingly to problems of great scope. A large part of our big research undertakings are cooperative with many other agencies, especially the Land Grant Colleges, and are managed almost wholly by the research scientists themselves. The prestige of the plant scientists, about which Mr. Whaley says he is worried, is not only high, and increasing, for their professional work, but also for their cooperative methods of administration. How well are they doing? Look at the record!

In the same paper Mr. Whaley quickly writes off the tropics. He even asserts that these regions cannot become important producers of "energy" crops. Should they hear of it, successful sugar cane planters and other farmers in Hawaii, northern Queensland, and wherever modern methods are used in the humid tropics would be puzzled. The problems of tropical agriculture are indeed complex, but the worst error of all would be to neglect them, if we want abundant food in the world.

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An Automatic Timer for Speakers

Timing devices available for notifying speakers that their allotted time has elapsed are generally cumbersome and require outside power sources. Many of these appliances in present use require alternating current, which is not easily obtained in hotels and meeting halls which produce their own direct current. Further, the mechanisms now in use mark the time allotted but do not remind the speaker that his time has run out.

We have recently designed a simple, compact, portable timing device which requires no outside source of electrical current. A commercially available timer is modified by the introduction of contacts for the completion of a circuit between three small flashlight batteries and a six-volt buzzer. An escapement type lever arm is introduced into the timing device to make it possible to turn on a light and to sound a buzzer for brief periods. The entire unit weighs less than one pound.

The chairman sets the time allotted on the timer. The time remaining to the speaker is indicated on the face of the dial. The warning light turns on automatically two minutes before the end of the specified period. At the end of the allotted period a buzzer sounds momentarily. One and a half minutes after the supposed end of the talk, the buzzer sounds again, this time for a longer period. Three minutes following the scheduled end of the talk, the buzzer sounds continuously for one minute to remind the speaker that he has overstayed his invitation. Varying times for these signals may be installed. The automatic character of the signal relieves the chairman of the occasionally unpleasant task of bringing the presentation to a close. This device has been tested satisfactorily at several meetings.

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