turing rapidly declines, beginning near the cut end and ending finally on the ridge farthest from the cut surfaces.

Preliminary observations indicate that the change in color of the exuded juice may be used as a maturity test and that the best time to harvest the fruit is when the exuded juice has become almost or wholly colorless. Earlier picking results in an inferior product and later picking reduces the keeping quality. The complete results will be published later when the experiments now in progress are concluded.

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BALLOONING OF AN ADULT BLACK WIDOW SPIDER

IT is generally known among workers that the young of the black widow spider (*Latrodectus mactans* Fabricius) are dispersed by means of ballooning. Illingworth (1931)[1] states that in Hawaii black widow spiderlings are dispersed by the wind blowing them along with their thin, light ballooning threads; even going out to sea.

However, on September 16, 1935, at about 11 A.M. I was walking across a vacant lot in East Denver. The day was fair and slightly breezy. When I was about half-way across the lot, I happened to look up and see a mature black widow spider ballooning. The spider had its appendages contracted, and it was about eight feet above the ground; as I watched, it continued to rise higher and finally disappear. The several threads of silk supporting the spider in mid-air were about seven to eight feet long. Further observations of like occurrences may possibly bring out the significance of this phenomenon.

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AIR-MASS AND FRONTAL ANALYSIS BY TELETYPE AND RADIO

TRANSMISSION by teletype and radio of the analysis of the morning weather map, in accordance with the air-mass system employed in the Division of Meteorological Physics of the Central Office of the Weather Bureau, Washington, D. C., was begun last October 15. The data, in code form, are placed on the teletype circuit daily at Washington, except Sundays and holidays, at 11:36 A. M. (E. S. T.) and are relayed to all airway communication circuits for entry on the manuscript maps at the various airports and for subsequent study and use of persons consulting them. City offices of the Weather Bureau receive the information by teletype, telephone or mail from nearby airports. Data for Sundays and holidays are transmitted the next working day immediately following the current day's analysis.

SNOWDEN D. FLORA

THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

LOCAL BRANCHES

IT is almost a year since the first Local Branch of the American Association for the Advancement of Science was organized. Six such branches are now operating, and several added groups have held preliminary meetings, looking toward organization. It is too early to discuss the success of these branches, but a descriptive statement about their operation and suggestions may be given that will be useful to those who plan other branches. The idea of local branches was discussed at length by Dr. J. McKeen Cattell in SCIENCE for December 21, 1934.[1] Reprints of that discussion may be had by application to the general secretary of the American Association for the Advancement of Science.

The six branches already approved by the Council of the American Association for the Advancement of Science, in the order of their organization, are: The Lancaster (Pa.) Branch of the A. A. A. S., the Kingston (R. I.) Branch of the A. A. A. S., the South Florida (Miami) Science Association, the Phoenix (Ariz.) Branch of the A. A. A. S., the Westchester (Yonkers) Institute of Sciences, and the Mobile Academy of Science. Each of these branches is autonomous in its procedures. Each elects a president or chairman, a secretary and a treasurer. Some also have one or more vice-presidents, an executive committee, a program committee and other committees on special needs relating to place of meeting, research, publicity, membership and luncheons or dinners. In most cases the organization is simple, the officers serving as the executive committee, with authority to appoint temporary special committees, as occasion may make desirable. In some branches there is an honorary president or chairman. This plan permits the branch to recognize and gain help from an outstanding citizen who can hardly be expected to attend committee meetings regularly.

Membership in the branches includes persons with

[1] J. F. Illingworth, *Proc. Hawaiian Ent. Soc.*, 7: 410–414, 1 pl., 1931 (cited by Charles E. Burt).

[1] J. McKeen Cattell, SCIENCE, Vol. 80, 1934.

all sorts of interest in science. Naturally, members of the A. A. A. S. are interested in local branches, even though they can not participate. In most cases, however, it has been members of the A. A. A. S. who have been the leaders in assembling the initial local groups. The entire membership of each branch is much larger than the total number of local members of the A. A. A. S. Those not members of the A. A. A. S. do not need to join the national organization in order to join the local branch. Undoubtedly, many will sometime join the national organization, but if so, they will join individually, as in the past. That is, membership in a local branch does not carry with it membership in the national organization. None of the magazines of the national organization are sent to branch members unless they have individually arranged for that. But branch membership does increase the availability of scientific books and magazines in libraries and from association members, who can lend their own copies for use by branch members. It must be made clear, however, that members of a local branch are not unduly urged to join the national organization, though they will be welcomed if individually they want to apply for such membership.

The types of persons who compose a local branch vary greatly. In some smaller branches those interested and engaged in research make up the membership. In others, educated people of a wide range of interests make up the membership—not only scientists, but business and professional people, lawyers, doctors, ministers, women from homes and from business, students and teachers. This second kind of branch brings science in its widest sense to all sorts of educated people. In a very real sense, this type of branch best serves the purposes in mind when the executive committee first proposed the organization of branches. It represents a good combination of research science with the most intelligent aspect of consumer sciences. It enables many people to have a good time together in their common commitment toward enlightened pleasure.

Some of the branches have adopted a constitution. I quote from the proposed constitution of the Phoenix Branch:

> A constitution has been drawn up providing for four classes of membership:
>
> (1) Active members, who must be members of the A. A. A. S. or an affiliated society.
>
> (2) Affiliate members, who may be any person over 21 years of age.
>
> (3) Student members, who may be persons regularly enrolled in college.
>
> (4) Honorary members. The number of honorary members may not exceed 10 at any time.
>
> Dues for active and affiliated members are $2.00 per year, for student members, 50¢ per year.
>
> A Board of Counselors, consisting of 15 active members, will control the affairs of the organization. The counselors are elected, 5 each year, for a term of 3 years. From the Board of Counselors an Executive Committee consisting of the President, Vice President, and Secretary and the Chairman of four standing committees is chosen.

In the Phoenix Branch only active members may vote or hold office. I am of the opinion that in all the other branches the active and affiliated or associated members are equal in all responsibilities and privileges of the branch. Also, most of the branches do not restrict membership by younger people. The annual dues range from one to two dollars. These funds, supplemented in some cases by individual contributions, have provided for the expenses.

There seems to be no need of making a lower limit of the number of members that may compose a branch. One branch began with a score of members, has now grown to fifty and is prospering and enthusiastic. The Lancaster branch has made the astonishing limit of one thousand members, and is within less than fifty of reaching its limit. It is too early to judge the success of so large a branch, but it is pleasing to know that science is the subject of an organization which, for the present at least, is "the thing" in a community which has been accustomed to the good features of a highly enlightened environment.

Programs for meetings have ranged from open discussions, participated in by many members, to formal lectures by speakers of national repute. Each branch has in its membership persons who are quite competent to give valuable lectures in fields of their own special concern. Local areas are thus discovering a wealth of local science sometimes not previously understood or recognized. With a broad interpretation of science each community can build an important part of its year's programs by use of its own members. Then, addresses and demonstrations by those from neighboring educational and research institutions, as well as less frequent addresses by persons from greater distances, have been used with great success. Admission to these programs is free to all branch members. Nonmembers are usually admitted upon payment of a small fee for each program attended. Radio programs for the branches seem to offer peculiar opportunities. If an important radio address has been announced, the secretary may send announcements to the members who may hear the address at home, or in small discussion groups, or in a larger meeting of the entire branch. This feature offers opportunities not yet well developed.

Topics of addresses given before some of the branches are suggestive. Such are: "Pre-Roman Archeology of the British Isles"; "Are Our Beliefs Scientific?"; "Some Needed Scientific Studies in This

Community"; "Science and Music"; "Some Unpublished Psychology"; "How Can Deaf Children Best Be Taught?"; "What About Cosmic Rays?"; "Newer Knowledge of Learning Processes"; "Science as a Career"; "Radio Engineering"; "Greenhouses and Illuminating Gas"; "The Science of Potato Growth"; "Our Community's Health"; "Why Not Live Longer?"; and many others. Science has now accumulated so much knowledge that a year's program may consist of almost anything which interests the members.

The success and usefulness of a local branch depends upon the quality of the local leadership. The inherent need and opportunity for the work of a branch seems to exist in almost any community. Possibly a few regions are already so well organized that no field of service remains for such an organization. Certainly most science men hardly need to join anything more in order to keep their time well filled. It is peculiarly true, however, that busy people are the ones most likely to find the time and inclination and to have acquired habits of organizing themselves and other people for new productive efforts.

OTIS W. CALDWELL,
General Secretary, American Association for the Advancement of Science

THE NATIONAL ACADEMY OF SCIENCES. II.

ABSTRACTS OF PAPERS PRESENTED AT THE AUTUMN MEETING[1]

(*Continued from page 541*)

Calcium as a factor in the nutritional improvement of health: H. C. SHERMAN. Starting with a food supply already adequate to the support of normal health, generation after generation, it was found possible to induce a higher degree of nutritional well-being (a superior internal environment for the life process) with resultant improvement of "positive" or "buoyant" health throughout the life cycle, by enrichment of the dietary in certain of its chemical factors. In the original experiments the improvement was brought about by adjustment of the quantitative proportions of the natural articles of food which composed the dietary. In terms of the actual foods there was only one experimental variable; but in terms of the chemical interpretation, four factors may have been involved, namely, calcium, protein and vitamins A and G (B_2). New experiments dealing separately with calcium are here reported. These show that the improvement of nutritional well-being and health previously noted was largely but not wholly due to the more liberal intake of calcium. When the original food supply (Diet A) was enriched in calcium only, and only to the same extent as in the previous experiments, there resulted improvement in the rate, efficiency and uniformity of growth, a decrease of death rates at all ages, a higher level of adult vitality with longer period between the attainment of maturity and the onset of senility and an increase in the average length of life. Experiments with diets of still more liberal calcium content are now in progress, and the effects of enrichment of intake of protein, of vitamin A and of vitamin G are also being studied.

An analysis of color-blindness in eleven thousand museum visitors: W. R. MILES.

Action potentials of various layers of the cerebral cortex of the monkey: J. G. DUSSER DE BARENNE and WARREN S. MCCULLOCH. It is well known that "spontaneous" action potentials are obtainable from the cerebral cortex of animals and man, even when deeply anesthetized. These action potentials, amplified with a 2-stage d.c. amplifier and recorded with a cathode ray oscillograph, were investigated in the cortex of monkeys under Dial anesthesia. Small silver—silver chloride electrodes, 2 to 3 mm apart, were used throughout. In combination with the method of laminar thermocoagulation, which permits one to destroy, at will, any number of consecutive layers of the cortex, it is possible to approach the problem of the action potentials originating in various layers of the cortex. After thermocoagulation, involving in each instance an area of 5×7 millimeters, the electrodes were replaced exactly in their original positions, well within the area coagulated. The results to be reported here are the following: (1) Thermocoagulation of the entire thickness of the cortex (80° C. for 5 seconds) immediately and permanently abolishes the action potentials normally found in the particular cortical area. (2) Laminar thermocoagulation of the outer four layers (70° C. for from 4 to 4½ seconds) reduces the local action potentials almost completely and permanently. (3) Destruction of the outer three layers (70° C. for 3 seconds) reduces the local action potentials markedly with little or no evidence of any return to their original size and form. This reduction is much less than that noted sub 2. (4) Laminar thermocoagulation of the outer two layers (65° C. for 3 seconds) results in a definite reduction in the action potentials from which there is some recovery, though they do not regain their initial size and shape at the end of one hour. The finding sub 1 shows that the electrical phenomena recorded under the conditions of these experiments arise in the cortical area under investigation. The findings sub 2, 3 and 4 show that the action potentials remaining after any thermocoagulation originate in the remaining layers of the cortex. (5) Laminar thermocoagulation of the outer three layers (70° C. for 3 seconds) of one area (5×7 mm) in the precentral, postcentral or frontal region produces changes in the local action potentials

[1] Charlottesville, Va., November 18, 19 and 20, 1935.