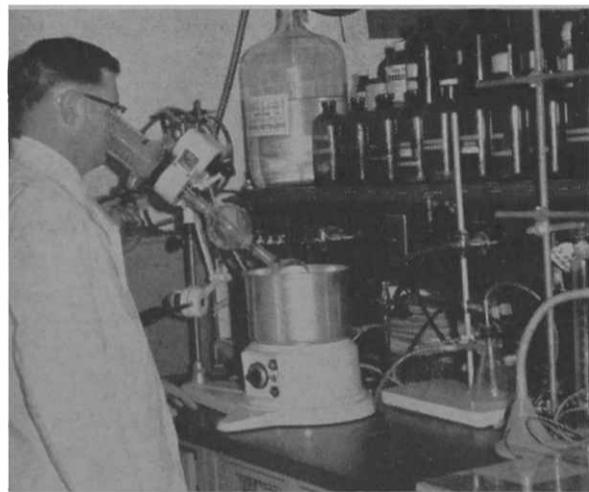


NEW FEDERAL HONEY BEE LABORATORY OPENED IN TUCSON



PARTIAL VIEW of the front of the new Honey Bee Laboratory.



A ROTO-EVAPORATOR to remove solvent is used when preparing pollen for analysis.

A bright new chapter in a very happy relationship recently took place when the federal Bee Research Laboratory moved into its new half million dollar home on East Allen Rd., near the UA Dairy Research Center.

The mutually helpful cooperation between this ARS agency of the U. S. Department of Agriculture and the UA College of Agriculture began 17 years ago. In 1949 Frank E. Todd and Samuel E. McGregor were transferred to Tucson, to set up a federal apiculture laboratory on The University of Arizona campus.

This first "bee lab" was in a white stucco building on the site where the new Science Library now stands. The building had once housed Home Economics, and before that was a university president's residence.

Out to Allen Road

When that building was moved in a university building program, the federal bee laboratory was moved to three ARS-owned buildings near the Dairy Center, land deeded to the U. S. Department of Agriculture by the university.

Over the years the Bee Research Laboratory has been concerned primarily with the use of honey bees

in the pollination of crops, and with the effects on bees of pesticides used on agricultural crops.

In its new home both the staff and its field of interest will be greatly increased. Since establishment here in 1949, the staff has varied from two to five professional scientists. The staff proposed to conduct the expanded program in the new facilities will total 16, including the present four.

Eventually there will be four professional workers in physiology-nutrition; three in pollination-insecticides, three in behavior, two in microbiology-cytology, two agricultural engineers, a plant physiologist and a plant breeder.

Onward and Upward

Over the years the staff has changed gradually. Frank Todd went to Washington to head honey bee research in the Agricultural Research Service. Later he retired, and Sam McGregor has replaced him at Washington.

Present head of the soon-to-expand staff is Dr. Marshall Levin, whose own scientific interest in apiculture was, this past year, overburdened with concerns over architects, builders, contractors, plumbers, laboratory sup-



RESEARCH ON NEW hive equipment shows that bees do well in this abnormally large brood chamber, being examined here.

plies, landscaping — and the intricate bookkeeping which all of that implies.

Dr. Levin obtained his bachelor's degree at the University of Connecticut, his master's and doctor's degrees at the University of Minnesota. He started his work in apiculture with the U. S. Department of Agriculture in June of 1954, and came to the Tucson bee research laboratories in April of 1962.

Activities Unified

The new laboratory, planning and construction of which he has largely directed, has 16,000 square feet of usable office, laboratory and storage space on one floor. Best of all, it unifies under one roof the activities formerly carried on in three buildings and other outbuildings. It includes offices, laboratories, and convenient access to shops and greenhouses. Dr. Levin already feels that the federal facility is making for a more efficient operation.

Research on bees in the United States has been conducted in the past by ARS scientists at five or six field stations in different parts of the country, and by about 20 universities and experiment stations.

Here in the Southwest, California has an extensive bee research program. Nevada, New Mexico and Texas have no such facilities. While work at Tucson and similar facilities is oriented to regional problems, such

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AN ESPECIALLY-DESIGNED microscope makes it possible to observe behavior of nurse bees, and to follow larval growth in the cell.



SEEDLING PLANTS are grown under intense light in the greenhouse to bring out genetic markers by means of which the extent of cross-pollination can be determined.



THE BUILDING'S name is prominently displayed near the front entrance.



HAND POLLINATION of alfalfa is carried out in the bee laboratory's greenhouses to determine crossability of alfalfa clones being tested.

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research also has wide applicability, useful to the entire nation.

Local Work Widely Useful

Studies on effects of insecticides on honey bees, conducted here in Arizona, have wide usefulness. The same is true of pollination studies, studies on pollen chemistry, bee attractants and repellents, bee biology and behavior.

"The relationship between the federal Bee Research Laboratory and The University of Arizona has been a happy one, and helpful to both," says Dr. Levin. It has been a solid basis for the graduate student program in entomology, which will be expanded as the new laboratory's staff expands. A member of the staff has taught UA courses on the honey bee, from the time Frank Todd first began the course in 1950. (In a re-

cent issue of **PROGRESSIVE AGRICULTURE IN ARIZONA** a Graham County Extension Agent, who has fostered and encouraged a honey production industry in that county, credits his own interest to "courses Frank Todd taught when I was a student at the University").

In the new laboratory the federal scientists expect to conduct, in cooperation with the University of Arizona and other institutions, investigation in five general areas: physiology-nutrition, pollination, pesticides, individual and group behavior, and microbiology-cytology.

Long Known — Little Known

Why are bees attracted to some plants and repelled by others? What does odor or color have to do with bee behavior? How do sound, light,

temperature and humidity affect bees? Although bees are the only insects managed and controlled as economically desirable helpers by man, much about them is a mystery to the apiculturist. This is more remarkable because bees and mankind have been associated to their mutual benefit for centuries. Biblical references to bees and honey are frequent.

Thanks to a Congressional appropriation — strongly urged by Sen. Carl Hayden — Dr. Levin and his associates hopefully expect to find answers important to the entire nation.

While the consumer with a jar of honey thinks of the bee principally as source of that healthful sweetening, the agriculturist knows that pol-

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BEES ARE HELD in small cages in the incubator for many purposes; test diets are fed, bees are held until proper age for some research use, or they are returned to the cages after experimental treatments of various kinds.



WHAT'S IN A LABEL?

By Pauline Hall

Some of the newer fabrics having widespread fashion appeal are now on local markets. In some, care labels are lacking while in others the information may be incomplete, misleading, and even confusing.

In Tucson, a few of the recent purchases of yard goods included a vinyl coated fabric and a fabric-to-fabric laminate. The vinyl coating is on 50 percent rayon and 50 percent cotton plain woven fabric and is available in colorful paisley patterns, solid colors and large polka-dots. The laminate has a face fabric of an Orlon acrylic filling knit in a houndstooth pattern backed with acetate tricot.

Similar fabrics are found in many ready-to-wear apparels and will appear in the array of fashions for spring. The vinyl coated fabrics are used for coats, jackets and young

Dr. Hall is an associate professor of clothing, textiles and related arts in the School of Home Economics.

girls' dresses. The end use of the laminates is limitless, and should depend on the fabrics making up the layers. These fabrics do not require linings and usually have better "hand" and body. Hand is a term to describe how a fabric feels, and is a subjective evaluation.

How Adequate Are Care Labels?

The vinyl coated fabric was labeled with the care information: "Do not wash or dry clean — wipe off with damp cloth." The cost of the fabric was high enough to expect to wear a garment made from it for quite awhile, in which normally more than a wiping would be needed to keep the garment clean. The laminated fabric carried the terse information of "Washable."

Both care labels appeared somewhat misleading and inadequate. Other research has indicated that vinyl coatings can usually be laundered satisfactorily, while the dry cleaning solvents attack the plasticizers. The plasticizers are one of the

components of the vinyl and give the soft pliable hand to the coating. The plasticizers are soluble in the dry cleaning solvent and, once these are removed, the vinyl coating becomes stiff and boardy and may cause some shrinkage.

The care of laminates not only depends on the fibers present in the layers of fabric, but also whether the adhesive usually used to laminate the layers is water-soluble or dry cleaning solvent-soluble. The fabric manufacturers of the laminates should consider the compatibility of the fibers in the layers of the fabric and the adhesive in terms of the expected end use of the textile.

Test for Care

In view of the information given on the labels for care of the two fabrics and reports of care for similar fabrics, some laboratory tests were made for launderability and dry-cleanability to determine the reliability of the labels. The tests were done in the Launder-Ometer which accelerates the conditions of cleaning normally done to fabrics.

Three different tests were made, including one dry cleaning and two washing conditions. Each of the accelerated dry cleanings equals five normal dry cleanings. One of the

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ination is the most important chore of the bee. The pollinating activity of the honey bee is an important part of a national production of two to three billion dollars worth of over 50 different crops in this country. Cotton, cantaloups and alfalfa, the citrus industry, the flowers which grace our gardens and homes, these and many more depend upon insect pollination.

No Surpluses in Future

The world itself is realizing that the day of food surpluses — surpluses only in a few commodities and in a few nations in a perennially hungry world — has ended. Growing populations face hunger and actual starvation.

The faithful little friend which pollinates our food and fiber crops — the honey bee — is more crucially important to man today than ever before. The new \$500,000 laboratory, dedicated to learning more about bees, dedicated also to increasing cooperation with this University and its College of Agriculture, is an asset to the community and the nation.

LABORATORY TESTS of various new fabrics are made by Dr. Hall, left, and a student, Connie Mitchell of Phoenix. Each of the round containers (between the two women) holds a fabric sample for testing. Above, on the chart, can be seen the small samples of fabrics which have undergone the accelerated cleaning test. Note how some curl up, some shrink, others change color, denoting probable results in actual usage.

