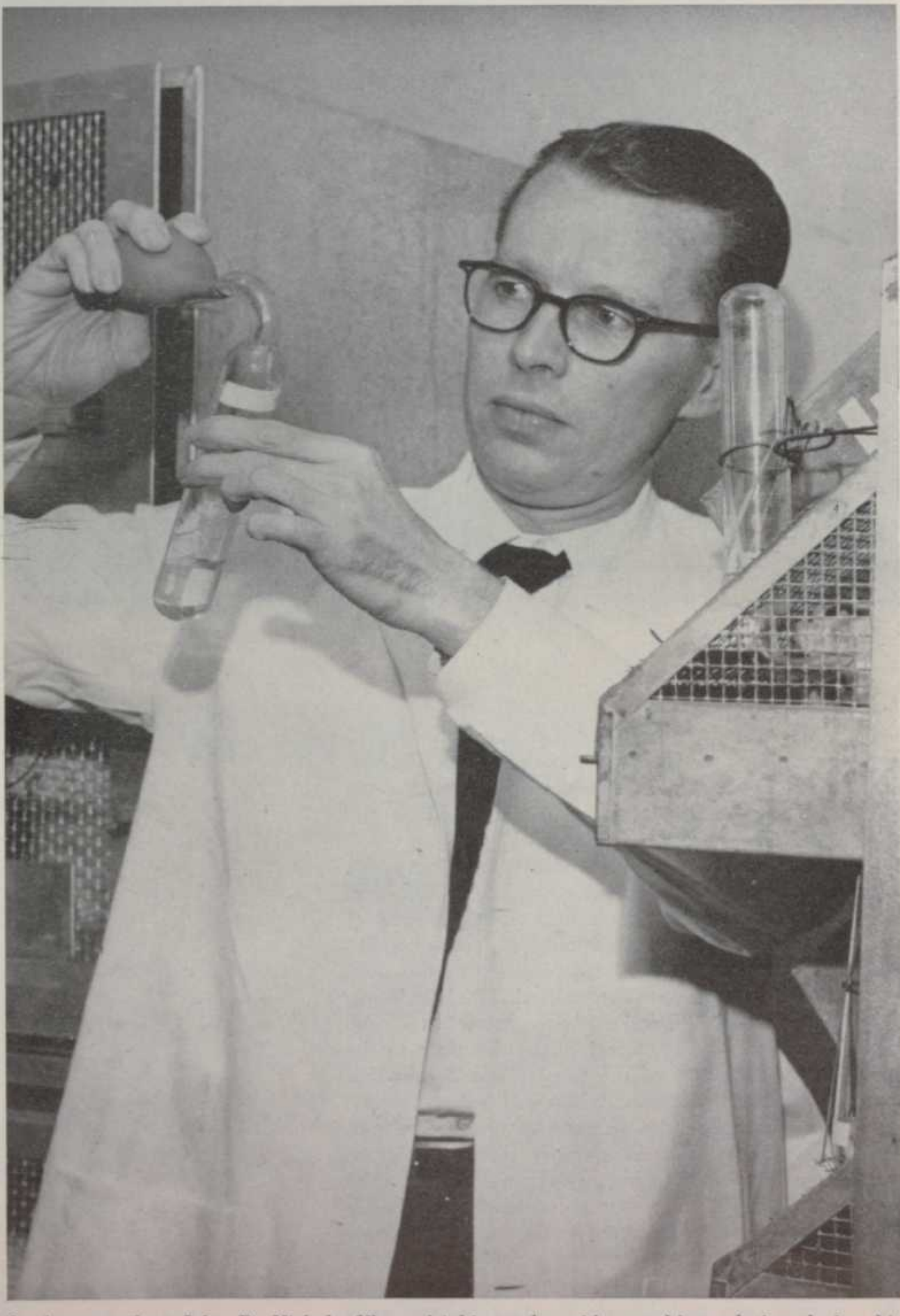
Do Addicts Learn Addiction?

A student intent on a doctor's degree in psychology thought they might, and set out to check his theory. After long months of research with rats substituting for human addicts, his theory proved to have some basis in fact.

By DAVID BURR, '52ba



Graduate student John R. Nichols fills a drinking tube with morphine solution during his doctoral research in drug addiction. Rat in cage at the right was employed in morphine tests.

One of the measures of a university's greatness is the research conducted by its students and faculty. Through research, new ideas may be advanced, theories formulated, knowledge broadened. For the layman, research often conjures up unusual mental pictures. Witches' brew. Mad scientists. Jagged sparks of electricity. It is a mysterious form of activity that makes the Atom Bomb possible and the electric light burn, but completely beyond the realm of ordinary mortals.

During much of the past year a young man, tall, quiet, and an ordinary mortal, has been engaged in research that may prove a useful addition to knowledge in the field of drug addiction and alcoholism. Watching him progress through his experiments is an exciting experience. Will the tests prove anything? Will they be valuable or an experiment in frustration and futility?

And then the results are in. They support the theory. Perhaps they will open an entirely new approach to why people become addicts and how they can be treated for their addiction more effectively.

In considering a project that could be used as the basis of a doctoral dissertation, John R. Nichols, '52ba, '54ma, believed that presently known theories on why people become addicts were not basic enough. Sure, many of them proved a part of the story, but there was no firm foundation that could support the whole house of addiction.

He considered existing explanations for addiction. Some workers in the field believe that one becomes an addict from the pleasure received from use of a drug. Others believe that drugs are used to avoid the stresses and strains of life. Personality defects of those who become addicts is another popular belief. By examination of the various theories, and there are many more than set down here, Nichols' initial research indicated that at best, they held only part of the answer to why people become addicts.

His interest in the matter began to warm. Was there a better answer? One that would cover the field of addiction with more authority? Perhaps what was needed was a different approach.

His initial research suggested that the process of addiction might be essentially that of escape conditioning—that one learns to avoid the unpleasant. The suggestion came from the fact that a man sobering from a drunk may take a "hair-of-the-dog-that-bit-him" the morning after to relieve hangover effects. Similarly, as the effects of a drug diminish, the user has unpleasant reactions or withdrawal distress that may be alleviated by another shot of dope.

So his theory or hypothesis was forming. But how to prove in the laboratory that addiction could be tied to escape condition—in effect, that addiction was a learning process?

For his first experiment, Nichols used 12 rats who had been injected with morphine during a 3-week period. All of the rats were offered a morphine solution to drink during this period but gave the bitter tasting liquid only tentative consideration.

Then the rats were divided into two groups of six each. Six of the rats were no longer injected with morphine but again offered the morphine solution. Six of the rats were injected with an amount of morphine equal to what each of the other six drank. Those with morphine solution supplied in their drinking tubes "learned" where they could find relief from their drug withdrawal distress. Those injected had the same distress but did not have a chance to drink morphine solution to relieve their distress.

After nearly a month of experimenting, the injected rats and the rats who drank their morphine were allowed to make a free choice of water or morphine solution. Both groups were suffering from withdrawal distress at the time. The results indicated that the injected rats, although they received as much morphine as their sisters, did not drink appreciable quantities of morphine solution when offered, but preferred water. The other six consumed appreciable quantities of morphine solution in preference to water —a clear suggestion that they had learned to escape their distress from withdrawal of the drug. These were well on their way to dope addiction while the other six were apparently free of addiction.

Nichols repeated the experiment with a slightly different set of conditions designed to double-check his first findings.

The results of both experiments were satisfactorily similar. And so, for the first time, evidence was available that implies a laboratory estimation of addictive possibilities of new drugs, offers a possible framework for many otherwise unexplained phe-

Continued page 13

For What Causes Coed's Expression, Turn Page

MARRIAGES: Miss Jeanne Karen Fisher, '55 bfa, Edmond, and Stephen Sanders Chandler III were married August 6 in the bride's home in Edmond. Mrs. Fisher is a member of Kappa Alpha Theta sorority. Chandler, who attended the University of the South and the University of Virginia, is a member of Sigma Alpha Epsilon fraternity. The couple is living in Houston.

Miss Sally Mugler, '55bfa, Perry, and Peyton Savin Carnes, Jr., '55eng, Fort Worth, were married August 28 in Perry. Mrs. Carnes was a member of Delta Delta Delta sorority at O.U. and Carnes was affiliated with Kappa Sigma fraternity. The Carnes have established a home in Laurel, Mississippi.

Miss Marisue Pounders, '55ba, and Jerry Blake Smith, '55ba, Ponca City, were married in Oklahoma City June 24. Mrs. Smith was associated with Kappa Alpha Theta sorority at O.U. and Smith was a member of Kappa Sigma fraternity. The couple has established a home in San Antonio.

Miss Pauline May Mize, Oklahoma City, and Don Arthur Main, '55ba, were married in the bride's home June 5. The couple has made a home in Pensacola, Florida.

Miss Marilyn Miller, '55ba, and Lieut. Thomas M. Harris, '54bs, were married September 3 in Ponca City. Mrs. Harris was a member of Pi Beta Phi sorority at O.U. and Harris was a member of Sigma Phi Epsilon fraternity.

Miss Emily Joan Wakefield, '55journ, formerly of Kansas City, and George Douglas Fox, '55ba, were married in Tulsa in late June. Fox will enter his junior year of law school at O.U. this fall. Mrs. Fox is a member of Delta Gamma sorority and Fox was affiliated with Sigma Phi Epsilon fraternity.

Miss Shirley Nadean Stewart, Wewoka, and John Marshall Huser, Jr., '55bs, were married June 4 in Wewoka. Mrs. Huser is a member of Alpha Phi sorority and Huser is affiliated with Sigma Alpha Epsilon fraternity.

Miss Mary Louise Brickner, '55phys.ed, and Lieut. Donald Ayres, Weatherford, were married June 18 in Clinton. Mrs. Ayres was a member of Pi Beta Phi sorority at O.U. The couple has established a home at Lubbock, Texas, where Lieutenant Ayres is stationed at Reece Air Force Base.

Miss Carolyn M. Jenner and Samuel Lee Britten, '55eng, were married July 2 in Oklahoma City. The couple has established a home in Chicago.

Miss Helen Janet McGalliard, Ardmore, and Ensign Jerry Lynn Bullard, '55ba, Norman, were married June 11 in Ardmore. Ensign Bullard was a member of Pi Kappa Alpha fraternity. The couple has established a home in Pensacola, Florida, where Ensign Bullard is stationed.

Miss Barbara Bale, '55geol, and Gerard de Jong, '54ba, were married September 11 in Oklahoma City. De Jong is from Pretoria, South Africa, while Mrs. de Jong is from Oklahoma City. The couple is living in Norman. Mrs. de Jong is *a* member of Alpha Phi sorority.

Miss Norma Kay Conner, '55mus, Oklahoma City, and James B. Greenshields, '55bus, Norman, were married in mid-July. They are making their home in Norman.

Miss Mary Ann Walton, '55journ, Norman, and Allan Richard King, '54eng, Grand Rapids, Michigan, were married June 5. The Kings are living in Odessa, Texas, where he is a petroleum engineer with the Atlantic Refining Co.

Miss Rita Shirley Schott, and Clement B. Lepak, '55eng.phys, both of Oklahoma City, were married July 16.

Miss Kathryn E. Ownby, '55ba, and James Dean Limestall, '54bs, both of El Reno, were married June 11.

Miss Frances Anne Fish, '55ba, Seminole, and Keith M. Kashwer, Oklahoma City, were married in early July. They have established a home in Oklahoma City.

Miss Barbara Nell Brown, '55ed, Peckham, and Thomas V. Tolleson, '55geol, Tulsa, were married in late June. They have established a home in Midland, Texas.

Do Rats Learn . . .

Continued from page 5

nomena of addiction, provides a means of investigating the process of addiction and its variables in the laboratory, and offers the underlying motive for the commonly used working theory that physical dependence and addiction are related.

One part of Nichols' research was completed. Still in the experimental stage: alcoholism. Would his experiments prove that alcoholism was related to escape training? He will not know for several months. But the work already completed should prove significant. At best it may establish a comprehensive foundation for the study of addiction—a contribution to knowledge through research by a University of Oklahoma graduate student.