

*For doctors, a valuable life-saving drug. For
Another great chapter in the proud history of Wisconsin*

DICUMAROL

A STORY that began during a driving blizzard 11 years ago at Westfield, Wisconsin, took a surprising turn this summer in a laboratory at the University of Wisconsin.

The story is of the chemical Dicumarol, found by Professor Karl Paul Link to cause a disease of cattle fed spoiled sweet clover hay. It is now used in hospitals throughout the world to prevent formation of menacing blood clots after surgical operations. It is also used to treat

the heart disease that strikes most suddenly of all.

The latest development concerns a chemical cousin of Dicumarol named warfarin—a killer showing promise of being the most effective poison yet developed to reduce the threat of epidemic disease and economic loss caused by man's most costly pest, the common rat.

In the late 1930's Wisconsin scientists isolated from hay the white chemical that caused the cattle disease. Why, asked Link, couldn't the chemical be used by surgeons to prevent blood clots after surgery, which sometimes travel to the lungs or heart with fatal consequences? Before surgeons could use Dicumarol, Link knew, they would need a substance to control its action.

From Alfalfa

Link and another scientist, Harold Campbell, thought such an antidote existed in alfalfa. And during that January blizzard in 1939 they drove to Westfield at the urgent request of

WHAT IS RESEARCH?

WHAT DO WE MEAN by the word "research"? This word has been greatly overworked in our generation. It merely means the application of scientific methods to the problems which we wish to solve.

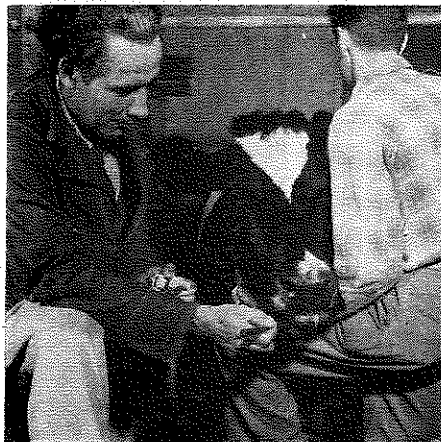
Research is a human enterprise and as such includes all the trials and joys, satisfactions and disappointments, gloom and humor encountered in any human activity. Furthermore, research is a gamble; if it is not a gamble, it is merely developmental work.

The real research man gets paid partly in dollars and partly in an opportunity to do research which he is really interested in.

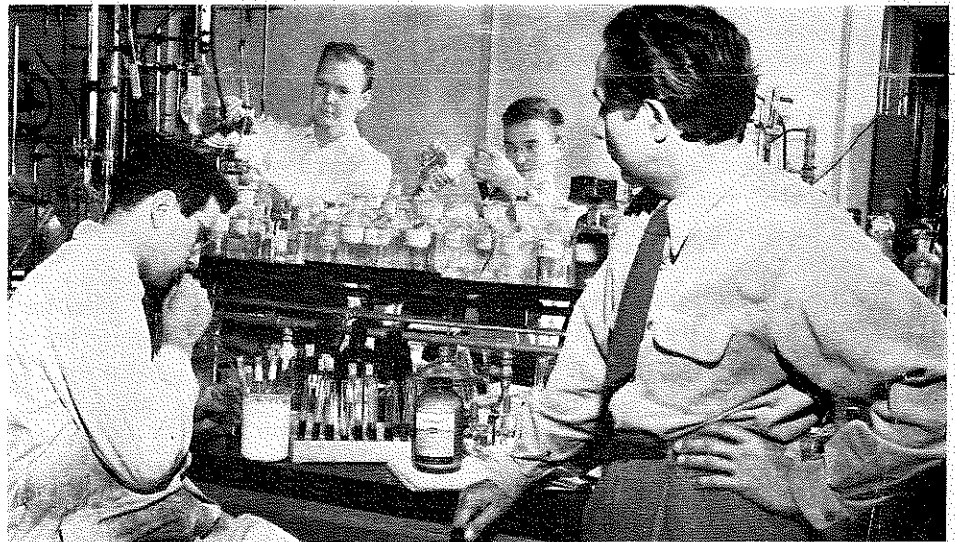
We have a good research pattern on the Wisconsin campus. We have a long history of both basic and developmental research. The fact that all of our work is on our campus has helped tremendously and we have learned to work together.

Getting money for basic research, even in a prosperous country such as the United States, always has been and probably always will be a great struggle. When a new University budget for 1951-53 is undergoing consideration, the man who can direct a little more of our total income into basic research—whether he be a university president, a research director in a big industry, a member of the board of directors of a large company, a member of the State Legislature, or a member of Congress—will make a contribution equal to that of our best scientists.

C. A. ELVEHJEM
Dean of the Graduate School



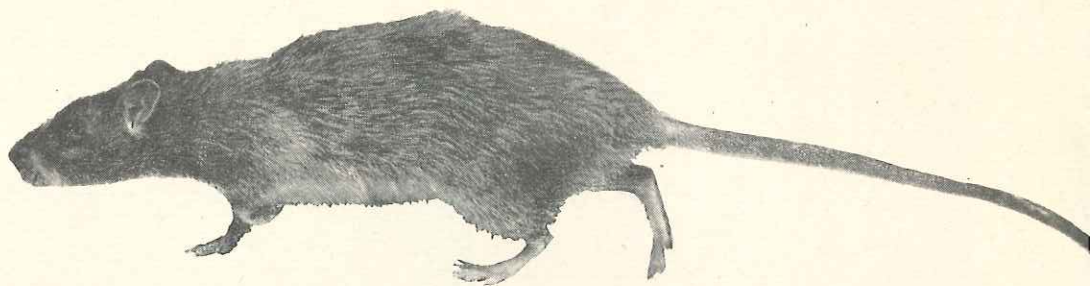
When a Wisconsin farmer's cows mysteriously bled to death internally after eating spoiled clover hay, the farmer called on the Ag College for help.



After long years of basic research, UW scientists isolated the chemical compound which caused the bleeding. More than that, they came up with an extract which would counteract hemorrhage in cattle.

*rats, a deadly poison:
University research.*

WARFARIN



a farmer whose herd lay dying of hemorrhage from the mysterious clover disease. An alfalfa extract had the herd on its feet in two days. But the men still did not know what the substance in alfalfa was—or whether it could be put to practical use in medicine.

Link followed a winding scientific trail for the next eight years. Only a hunch and dogged persistence kept him at the work.

. . . . To Life

But he found the answer: Vitamin K would act as an antidote to an overdose of Dicumarol. One of the first doctors to use Dicumarol therapy estimated it saved the lives of 73 patients out of 1,686 on whom it was used, and spared 211 the experience of thrombosis and embolism. The number of amputations necessary after the sudden formation of a clot in the leg was cut by 75

per cent. The drug has found use in treatment of coronary thrombosis—the heart attack that most frequently hits those persons who are over 45 and who live and work under tension.

. . . . and Death

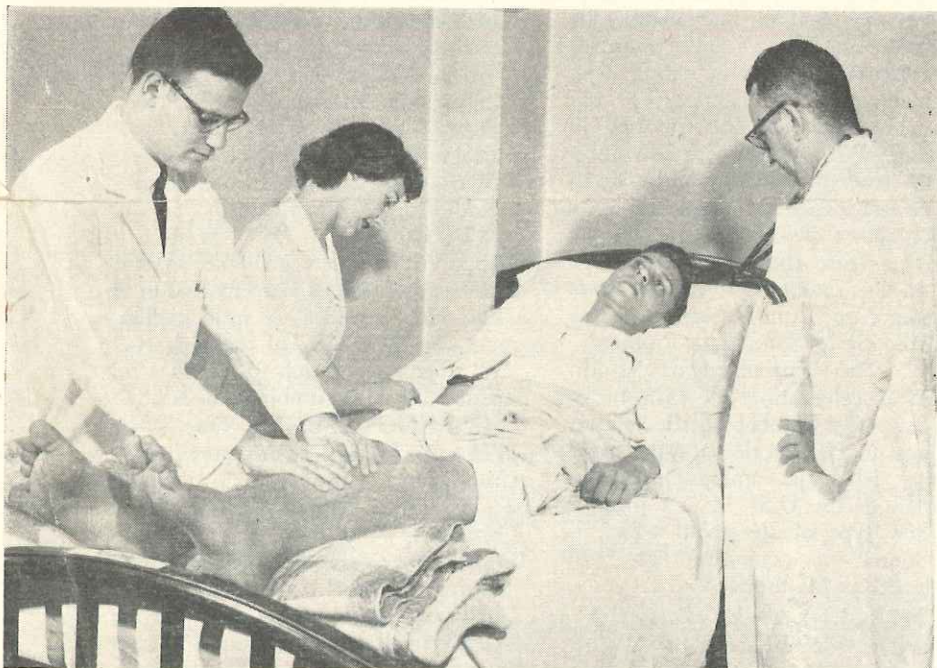
Research to find a better Dicumarol brought up warfarin, developed on funds provided by the Wisconsin Alumni Research Foundation, which controls the patent in the public interest.

When properly used, warfarin will completely and permanently wipe out rodent colonies, yet it presents little or no hazard to children, pets, and domestic animals. It is not a professional's poison. It can be used by anyone.

Says Link: "Through warfarin, the extermination of rats and mice will be put on a sound scientific basis."



Professor Karl Paul Link is the brilliant biochemist behind the Dicumarol-warfarin story. He holds three UW degrees, has been on the staff since '27.



Refined and tested, the anticoagulant agent is now used to treat coronary thrombosis and postoperative blood clots in humans. It's known as Dicumarol, is patented by the Wisconsin Alumni Research Foundation.



Perfected as warfarin, a related hemorrhagic agent is now on the market as a cheap, super-effective rodenticide.