REMARKS BY SENATOR HUBERT H. HUMPHREY

p. A.

AGRICULTURAL EXTENSION SERVICE CENTENNIAL BANQUET

Minneapolis, Minnesota

April 25, 1975

It is a pleasure and an honor to participate with you in this great event, commemorating the 100th anniversary of agricultural experiment stations in the nation and the 90th anniversary of the Minnesota Agricultural Experiment Station.

For too many years, the great productivity of our agricultural heartland has been taken for granted. Now, all that has changed. Our people have begun to realize the importance and the great complexity of our agricultural system.

The word has gone forth, and the Rome World Food Conference, in particular, highlighted the world's need for ever-increasing supplies of food.

The role of the United States in preventing food deficits of 100 million tons by 1985 in the developing countries is of critical importance. If the world is to have increased food security in the years ahead, the United States can and must play a central role.

One of the important keys to expanding the food supplies in the future is a high level of investment in agricultural research.

Agricultural research has been important since the early days of our country. We are aware of Thomas Jefferson's interest in looking for improved rice varieties, experimenting with crop rotation and soil fertility, and developing a formula for a lower resistance moldboard plow.

From the earliest days of our country, the dissemination of agricultural information was important in spreading new ideas. In 1784, the South Carolina Agricultural Society was formed, and in 1785 the Philadelphia Society for Promoting Agriculture was founded.

The Department of Agriculture was established by President Lincoln in 1862. The first Commissioner of Agriculture, Isaac Newton, reported to the President that "the essential conditions, it seems to me, are -- peace; a continued and increasing demand for agricultural products, both at home and abroad; and an increased respect for labor; a more thorough knowledge and practice of agriculture as an art and science; and, finally, a more thorough education of our farmers in the physical sciences, in political economy, in taste, in general reading . . . but as there is no royal road to agriculture, neither is there to knowledge. The latter must be acquired by long mental husbandry, but like that of the soil, it yields many solid pleasures. . ."

In 1862 the Land Grant College Act was passed. These institutions, or "people's colleges" were established to provide practical education and knowledge for the people.

In 1887 the Hatch Act was enacted to create state agriculture experiment stations. This program vastly increased the efficiency of agriculture research and the adaptive research required for specific geographic areas. In 1914 the Smith-Lever Act was passed, creating the Federal Extension Service, to disseminate the research results to farmers.

These steps were of critical importance in laying the groundwork for our rapid expansion in food production. In the past three decades, the average yields of corn have gone up by about three-fold, wheat yields have doubled, and milk production per cow also has doubled.

Work at the University of Minnesota has led to the development of a new semi-dwarf wheat variety, which is yielding about 5 bushels per acre more than the earlier varieties.

In practical terms, planting this new variety on 1.6 million acres in 1974 meant 460 million more loaves of bread than would have been available with the traditional varieties.

This experiment station has also developed new soybean varieties, with a higher protein yield. It is anticipated that the extra yield from 2 million acres, planted with the new varieties, will meet the protein requirements of an additional 1 million people for a year.

Research on plant diseases such as stem and leaf rust as well as fungi has resulted in considerable savings of grains which otherwise would have been lost.

A new source of oats genes has been identified by Dr. Kenneth J. Frey, which indicates that yields of oats could be increased by 25 to 30 percent. This would be a major contribution in addressing the world's food requirements.

In the years ahead, we will need to pay far greater attention to our agriculture research priorities. And we will need to identify and fund those activities demonstrating the greatest potential.

I have introduced the Agricultural Energy Research Act of 1975 to deal with another important area of agricultural research, the uses of energy in the field of agriculture.

As we all know, agriculture is a great user of energy and energy products. In recent years, we have come to realize the vital connection between agricultural production and petroleum products.

The conservation of petroleum products, while keeping up our agricultural output, will be a major concern in the years ahead.

This effort will require a careful examination, relating energy costs and amounts to levels of agricultural production.

I also have recommended that we give high priority attention to soybean research, since its "fixation process" holds great promise as a way of conserving nitrogen fertilizer.

I have pointed out the importance of carrying out intensified research on weather trends, so that we can have greater predictability in the future concerning food availabilities.

In addition to improved research itself, we need to develop an improved worldwide agricultural information system, which would provide current data on food availabilities and food production. This system would share vital information and maximize the availabilities of the world's food productive system.

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While paying greater attention to our domestic research priorities, we also must look carefully at agricultural research in the developing world. Far greater stress must be placed on tropical research, and particularly increasing the output of the small farmer.

It is generally agreed that a major effort must be made to increase the productivity of the small farmer. But to date, most research has been designed to benefit the large-scale farmer.

The small farmer has not been able to make the investments necessary for the new seed varieties, fertilizer and irrigation. The International Rice Research Institute, located in the Philippines, has begun to pay more careful attention to finding ways of assisting the small farmer.

We must recognize the risk involved for the small farmer in changing his pattern of production.

And a related problem has been that governments have not been responsive to the needs of small farmers. It is always easier to provide services for a few established farmers than a multitude of small, struggling peasants.

The existing network of international agricultural research centers across the world need to relate their programs to the needs and realities of the small farmer, whether it be in potatoes, rice, corn or wheat. Approaches must be developed which involve minimal investment and limited risk for the small farmer.

I have introduced legislation in the Senate to bring our land grant universities more actively into the agricultural production effort in the developing countries. At our recent food aid hearings in the Senate, it was pointed out that in the United States the land grant universities played a major role in expanding U.S. food production and bringing new information to our family farmers.

I believe that the land grant universities can play the same role in devising relevant programs to increase food production in the developing countries.

We should not encourage a developing country to prematurely adopt our own sophisticated research and production practices. We should encourage those practices which are realistic and can be adopted by small farmers on a wide-scale basis.

We have been able to observe that, both at home and abroad, the "trickle-down" approach just does not work. We need to encourage a system of development which promotes change and improvement through the "percolation" process.

By "percolation" we mean working with the small farmers and having the benefits bubble upward. The problem with the "trickle-down" approach is that most of the benefits stay near the top.

Last year we rewrote the foreign aid legislation along these lines, but we need to do more in moving in this direction.

A major lesson to keep in mind is that agricultural research is not a sterile or dull topic which should be of interest only to the professional. It involves understanding agricultural policies and the entire production process.

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We can, and we certainly will continue to provide food aid to meet the world's food needs. But we also must look for ways of expanding the world's agricultural production.

In remarks before the World Food Conference, Secretary of State Kissinger stated, "(The United States) regards our good fortune and strength in the field of food production as a global trust. We recognize the responsibilities we bear by virtue of our extraordinary productivity, our advanced technology, and our tradition of assistance."

I most strongly support this commitment. The United States has an opportunity and a challenge which can only be described as awesome.

Those connected with the Minnesota Experiment Station and its outstanding accomplishments are to be congratulated on this occasion.

I wish you continued success in the future. You are certainly among the best of our nation's hunger fighters.

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MINNEAPOLIS, MINNESOTA Radisson Downtown Hotel

APRIL 25, 1975

IT IS A PLEASURE AND AN HONOR TO PARTICIPATE WITH YOU IN THIS GREAT EVENT, COMMEMORATING THE 100TH ANNIVERSARY OF AGRICULTURAL EXPERIMENT STATIONS IN THE NATION AND THE 90TH ANNIVERSARY OF THE MINNESOTA AGRICULTURAL EXPERIMENT STATION. FOR TOO MANY YEARS, THE GREAT PRODUCTIVITY OF OUR AGRICULTURAL HEARTLAND HAS BEEN TAKEN FOR GRANTED, NOW, ALL THAT HAS CHANGED OUR PEOPLE HAVE BEGUN TO REALIZE THE IMPORTANCE AND THE GREAT COMPLEXITY OF OUR AGRICULTURAL SYSTEM. THE WORD HAS GONE FORTH, AND THE ROME WORLD FOOD CONFERENCE, IN PARTICULAR, HIGHLIGHTED THE WORLD'S NEED FOR EVER-INCREASING r EUX River SUPPLIES OF FOOD. In Having Bothweek

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THE ROLE OF THE UNITED STATES IN PREVENTING FOOD DEFICITS OF 100 MILLION TONS BY 1985 IN THE DEVELOPING COUNTRIES IS OF CRITICAL IMPORTANCE / IF THE WORLD IS TO HAVE INCREASED FOOD SECURITY IN THE YEARS AHEAD, THE UNITED STATES CAN AND MUST PLAY A CENTRAL ROLE, (antoniado martin) (Follow of ONE OF THE IMPORTANT KEYS TO EXPANDING THE FOOD SUPPLIES IN THE FUTURE IS A HIGH LEVEL OF INVESTMENT IN AGRICULTURAL RESEARCH .- (Public Private) - (International) AGRICULTURAL RESEARCH HAS BEEN IR COUNTRY. WE ARE AWARE OF THOMAS JEFFERSON'S INTEREST IN LOOKING FOR IMPROVED RICE VARIETIES, EXPERIMENTING WITH CROP ROTATION AND SOIL FERTILITY, AND DEVELOPING A FORMULA FOR A LOWER RESISTANCE MOLDBOARD PLOW.

-3-FROM THE EARLIEST DAYS OF OUR COUNTRY, THE DISSEMINATION OF AGRICULTURAL INFORMATION WAS IMPORTANT IN SPREADING NEW IDEAS. st Roads - He Ranal Free Delever IN 1784, THE SOUTH CAROLINA AGRICULTURAL SOCIETY WAS FORMED, AND IN 1785 THE PHILADELPHIA SOCIETY FOR PROMOTING AGRICULTURE (Pool Roads - + Rural Tree Delivery) WAS FOUNDED. THE DEPARTMENT OF AGRICULTURE WAS ESTABLISHED BY PRESIDENT LINCOLN IN 1862 THE FIRST COMMISSIONER OF AGRICULTURE, ISAAC NEWTON, REPORTED TO THE PRESIDENT THAT HTHE ESSENTIAL CONDITIONS, IT SEEMS TO ME, ARE -- PEACE; A CONTINUED AND INCREASING DEMAND FOR AGRICULTURAL PRODUCTS, BOTH AT HOME AND ABROAD; AND AN INCREASED RESPECT FOR LABOR; A MORE THOROUGH KNOWLEDGE AND PRACTICE OF AGRICULTURE AS AN ART AND SCIENCE; AND, FINALLY, A

MORE THOROUGH EDUCATION OF OUR FARMERS IN THE PHYSICAL SCIENCES IN POLITICAL ECONOMY, IN TASTE, IN GENERAL READING . . . BUT AS THERE IS NO ROYAL ROAD TO AGRICULTURE, NEITHER IS THERE TO KNOWLEDGE. THE LATTER MUST BE ACQUIRED BY LONG MENTAL HUSBANDRY BUT LIKE THAT OF THE SOIL, IT YIELDS MANY SOLID PLEASURES. IN 1862 THE LAND GRANT COLLEGE ACT WAS PASSED THESE INSTITUTIONS, OR "PEOPLE'S COLLEGES" WERE ESTABLISHED TO PROVIDE PRACTICAL EDUCATION AND KNOWLEDGE FOR THE PEOPLE .887 THE HATCH ACT WAS ENACTED TO CREATE STATE AGRICUL TURE EXPERIMENT STATIONS, / THIS PROGRAM VASTLY INCREASED THE EFFICIENCY OF AGRICULTURE RESEARCH AND THE ADAPTIVE RESEARCH REQUIRED FOR SPECIFIC GEOGRAPHIC AREAS,

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opper-Valsterditet IN 1914 THE SMITH-LEVER ACT WAS PASSED, CREATING THE FEDERAL EXTENSION SERVICE, TO DISSEMINATE THE RESEARCH RESULTS Ourcounty Agents - our 4H chules TO FARMERS THESE STEPS WERE OF CRITICAL IMPORTANCE IN LAYING THE GROUNDWORK FOR OUR RAPID EXPANSION IN FOOD PRODUCTION. IN THE PAST THREE DECADES, THE AVERAGE YIELDS OF CORN HAVE GONE UP BY ABOUT THREE-FOLD, WHEAT YIELDS HAVE DOUBLED, AND MILK PRODUCTION PER COW ALSO HAS DOUBLED, WORK AT THE UNIVERSITY OF MINNESOTA HAS LED TO THE DEVELOP-MENT OF A NEW SEMI-DWARF WHEAT VARIETY, WHICH IS YIELDING ABOUT 5 BUSHELS PER ACRE MORE THAN THE EARLIER VARIETIES.

IN PRACTICAL TERMS, PLANTING THIS NEW VARIETY ON 1.6 MILLION ACRES IN 1974 MEANT 460 MILLION MORE LOAVES OF BREAD THAN WOULD HAVE BEEN AVAILABLE WITH THE TRADITIONAL VARIETIES. IMENT STATION HAS ALSO DEVELOPED NEW SOYBEAN VARIETIES, WITH A HIGHER PROTEIN YIELD. IT IS ANTICIPATED THAT THE EXTRA YIELD FROM 2 MILLION ACRES, PLANTED WITH THE NEW VARIETIES, WILL MEET THE PROTEIN REQUIREMENTS OF AN ADDITIONAL 1 MILLION PEOPLE FOR A YEAR. RESEARCH ON PLANT DISEASES SUCH AS STEM AND LEAF RUST AS WELL AS FUNGI HAS RESULTED IN CONSIDERABLE SAVINGS OF GRAINS (my uncle flamy WHICH OTHERWISE WOULD HAVE BEEN LOST.

-7-A NEW SOURCE OF OATS GENES HAS BEEN IDENTIFIED BY DR. KENNETH J. FREY, WHICH INDICATES THAT YIELDS OF OATS COULD BE INCREASED BY 25 TO 30 PERCENT, THIS GOULD BE A MAJOR CONTRIBU-TION IN ADDRESSING THE WORLD'S FOOD REQUIREMENTS. IN THE YEARS AHEAD, WE WILL NEED TO PAY FAR GREATER ATTENTION TO OUR AGRICULTURE RESEARCH PRIORITIES. AND WE WILL NEED TO IDENTIFY AND FUND THOSE ACTIVITIES DEMONSTRATING THE GREATEST POTENTIAL INTRODUCED THE AGRICULTURAL ENERGY RESEARCH ACT OF 1975 TO DEAL WITH ANOTHER IMPORTANT AREA OF AGRICULTURAL RESEARCH, THE USES OF ENERGY IN THE FIELD OF AGRICULTURE.

As we all know, agriculture is a great user of energy and energy products. In recent years, we have come to realize the vital connection between agricultural production and

PETROLEUM PRODUCTS.

THE CONSERVATION OF PETROLEUM PRODUCTS, WHILE KEEPING UP OUR AGRICULTURAL OUTPUT, WILL BE A MAJOR CONCERN IN THE YEARS AHEAD. THIS EFFORT WILL REQUIRE A CAREFUL EXAMINATION, RELATING ENERGY COSTS AND AMOUNTS TO LEVELS OF AGRICULTURAL PRODUCTION. I ALSO HAVE RECOMMENDED THAT WE GIVE HIGH PRIORITY ATTENTION TO SOYBEAN RESEARCH, SINCE ITS "FIXATION PROCESS" HOLDS GREAT PROMISE AS A WAY OF CONSERVING NITROGEN FERTILIZER. Frous can be developed for wheat of

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Climataligite - Meterolog Nuthe IMPORTANCE OF CARRYING OUT INTENSIFIED RESEARCH ON WEATHER TRENDS, SO THAT WE CAN HAVE GREATER PREDICTABILITY IN THE FUTURE CONCERNING FOOD AVAILABILITIES. WE NEED TO DEVELOP IN ADDITION TO AN IMPROVED WORLDWIDE AGRICULTURAL INFORMATION SYSTEM, WHICH PROVIDE CURRENT DATA ON FOOD AVAILABILITIES AND FOOD ICTION THIS SYSTEM WOULD SHARE VITAL INFORMATION AND MAXIMIZE THE AVAILABILITIES OF THE WORLD'S FOOD PRODUCTIVE SYSTEM H WHILE PAYING GREATER ATTENTION TO OUR DOMESTIC RESEARCH PRIORITIES, WE ALSO MUST LOOK CAREFULLY AT AGRICULTURAL RESEARCH IN THE DEVELOPING WORLD FAR GREATER STRESS MUST BE PLACED ON an production in avid areas TROPICAL RESEARCH, AND PARTICULARLY INCREASING THE OUTPUT OF THE SMALL FARMER on the leudenloped areas

-10-LA IT IS GENERALLY AGREED THAT A MAJOR EFFORT MUST BE MADE TO INCREASE THE PRODUCTIVITY OF THE SMALL FARMER. BUT TO DATE, MOST RESEARCH HAS BEEN DESIGNED TO BENEFIT THE LARGE-SCALE FARMER and production unit: THE SMALL FARMER HAS NOT BEEN ABLE TO MAKE THE INVESTMENTS NECESSARY FOR THE NEW SEED VARIETIES, FERTILIZER AND IRRIGATION THE INTERNATIONAL RICE RESEARCH INSTITUTE, LOCATED IN THE PHILIPPINES, HAS BEGUN TO PAY MORE CAREFUL ATTENTION TO FINDING world Bo Eng WAYS OF ASSISTING THE SMALL FARMER. WE MUST RECOGNIZE THE RISK INVOLVED FOR THE SMALL FARMER IN CHANGING HIS PATTERN OF PRODUCTION.

-11-AND A RELATED PROBLEM HAS BEEN THAT GOVERNMENTS HAVE NOT BEEN RESPONSIVE TO THE NEEDS OF SMALL FARMERS, IT IS ALWAYS (EASIER TO PROVIDE SERVICES FOR A FEW ESTABLISHED FARMERS THAN A MULTITUDE OF SMALL, STRUGGLING PEASANTS, THE EXISTING NETWORK OF INTERNATIONAL AGRICULTURAL RESEARCH CENTERS ACROSS THE WORLD NEED TO RELATE THEIR PROGRAMS TO THE NEEDS AND REALITIES OF THE SMALL FARMER, WHETHER IT BE IN POTATOES, RICE, CORN OR WHEAT. APPROACHES MUST BE DEVELOPED WHICH INVOLVE MINIMAL INVESTMENT AND LIMITED RISK FOR THE SMALL FARMER. - In the this o I HAVE INTRODUCED LEGISLATION IN THE SENATE TO BRING OUR LAND GRANT UNIVERSITIES MORE ACTIVELY INTO THE AGRICULTURAL PRODUCTION EFFORT IN THE DEVELOPING COUNTRIES.

-12-NTLEOOD AID HEARINGS IN THE we Know, MAT IN THE UNITED STATES THE LAND GRANT UNIVERSITIES PLAYED A MAJOR ROLE IN EXPANDING U.S. FOOD PRODUCTION AND BRINGING NEW INFORMATION TO OUR FAMILY FARMERS. I BELIEVE THAT THE LAND GRANT UNIVERSITIES CAN PLAY THE SAME ROLE IN DEVISING RELEVANT PROGRAMS TO INCREASE FOOD PRODUC-TION IN THE DEVELOPING COUNTRIES_ HullReque Theant + Efterentothe specific reads re adipte E SHOULD NOT ENCOURAGE A DEVELOPING COUNTRY TO PREMATURELY ADOPT OUR OWN SOPHISTICATED RESEARCH AND PRODUCTION PRACTICES. SHOULD ENCOURAGE THOSE PRACTICES WHICH ARE REALISTIC AND CAN rended Wary Pourty- atrialen for BE ADOPTED BY SMALL FARMERS ON A WIDE-SCALE BASIS.

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RESEARCH IS NOT A STERILE OR DULL TOPIC WHICH SHOULD BE OF INTEREST ONLY TO THE PROFESSIONAL, IT INVOLVES UNDERSTANDING . AGRICULTURAL POLICIES AND THE ENTIRE PRODUCTION WE CAN, AND WE CERTAINLY WILL CONTINUE TO PROVIDE FOOD AID TO MEET THE WORLD'S FOOD NEEDS, BUT WE ALSO MUST LOOK FOR WAYS OF EXPANDING THE WORLD'S AGRICULTURAL PRODUCTION. IN REMARKS BEFORE THE WORLD FOOD CONFERENCE, SECRETARY OF STATE KISSINGER STATED, "(THE UNITED STATES) REGARDS OUR GOOD FORTUNE AND STRENGTH IN THE FIELD OF FOOD PRODUCTION AS A GLOBAL TRUST WE RECOGNIZE THE RESPONSIBILITIES WE BEAR BY VIRTUE OF OUR EXTRAORDINARY PRODUCTIVITY, OUR ADVANCED

TECHNOLOGY, AND OUR TRADITION OF ASSISTANCE."

A MAJOR LESSON TO KEEP IN MIND IS THAT AGRICULTURAL

I MOST STRONGLY SUPPORT THIS COMMITMENT. THE UNITED STATES HAS AN OPPORTUNITY AND A CHALLENGE WHICH CAN ONLY BE DESCRIBED AS AWESOME.

THOSE CONNECTED WITH THE MINNESOTA EXPERIMENT STATION AND ITS OUTSTANDING ACCOMPLISHMENTS ARE TO BE CONGRATULATED ON THIS OCCASION.

I WISH YOU CONTINUED SUCCESS IN THE FUTURE. YOU ARE CERTAINLY AMONG THE BEST OF OUR NATION'S HUNGER FIGHTERS.

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