Photographs

AMD-8

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SGT. I.R. KYLE


CAPT. D.W.S. BEST


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COL. W.H. BROWN


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LT.COL. W.R. FEASBY


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MAJ. A.F. STEVENSON


CAPT. D.M. BELL


MAJ. J.S. SMIT


MAJ. T. BEATH


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NRC STAFF


MR. J.S. COOK


MRS. M.E. PARKER

RESEARCH UNIT IN BURMA


LT. H.F. AITON


LT. COL. R.M. KARK


W.O.II E.D. PEASE

1942 - ASSOCIATE COMMITTEE on ARMY MEDICAL RESEARCH - 1946


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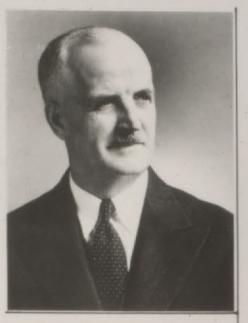
Brig. G.R.D. Farmer


Col. J.D. Griffin


Brig. J.C. Meakins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Lt. Col. W.J. Wood


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Dr. W.H. Cook


Capt. E.O. Hughes


Prof. H.E. Hoff


Dr. D.C. Rose


Capt. D.M. Bell

Not included in photograph: Maj. N.E. McKinnon, Col. D.L. MacLean, Prof. D. Graham and Lt. Col. J.L. Blaisdell (Hon. Sec'y)

DGMS

DDGMS(B)

AMD 8
RESEARCH & DEVELOPMENT
CONSULTANTS
COLONEL (1)
LT. COLONEL (1)

SPECIALISTS
MAJORS (4)
RESPIRATORY DISEASES
NUTRITION
BIOPHYSICS
ORTHOPAEDICS

FIELD & LABORATORY TECHNICIANS (20)
SERGEANTS (2)
CORPORALS (6)
PRIVATES (12)

VITAMIN ASSAYS (2)
PHYSIOLOGY (5)
BACTERIOLOGY (1)
PARASITOLOGY (2)
ENTOMOLOGY (2)
AUDITORY PROBLEMS (1)
PROTECTIVE EQUIPMENT (2)
FOOT SURVEY (2)
ARTISTS (3)

OFFICE STAFF
CAPTAIN (1)
CIVIL SERVANTS (3)
NCO's (2)
PRIVATES (2)

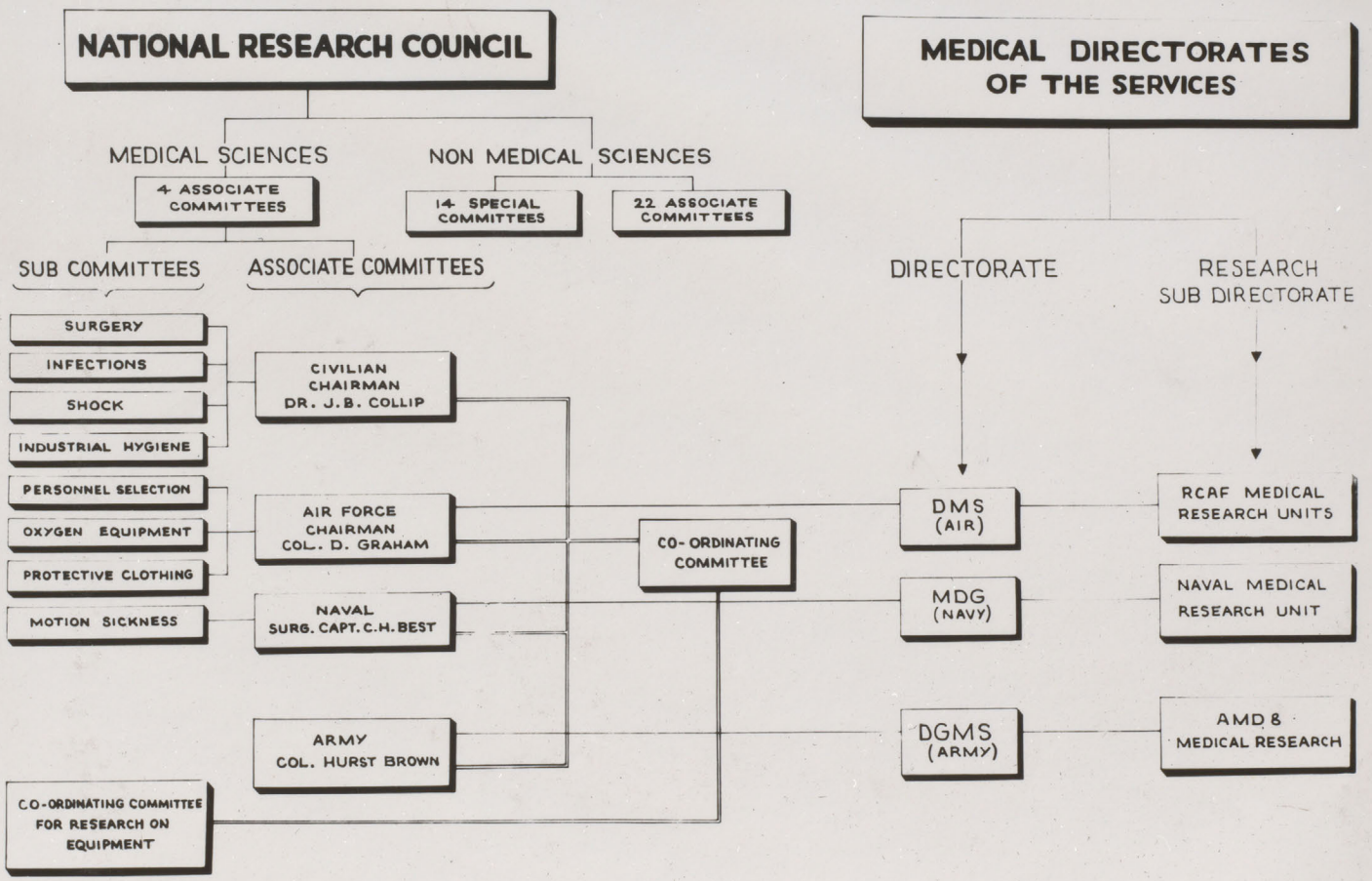
INVESTIGATORS
CAPTAIN (1)
LIEUTENANTS (3)

NEUROSURGERY
PROTECTIVE EQUIPMENT
BLOOD COAGULATION
BIOPHYSICS

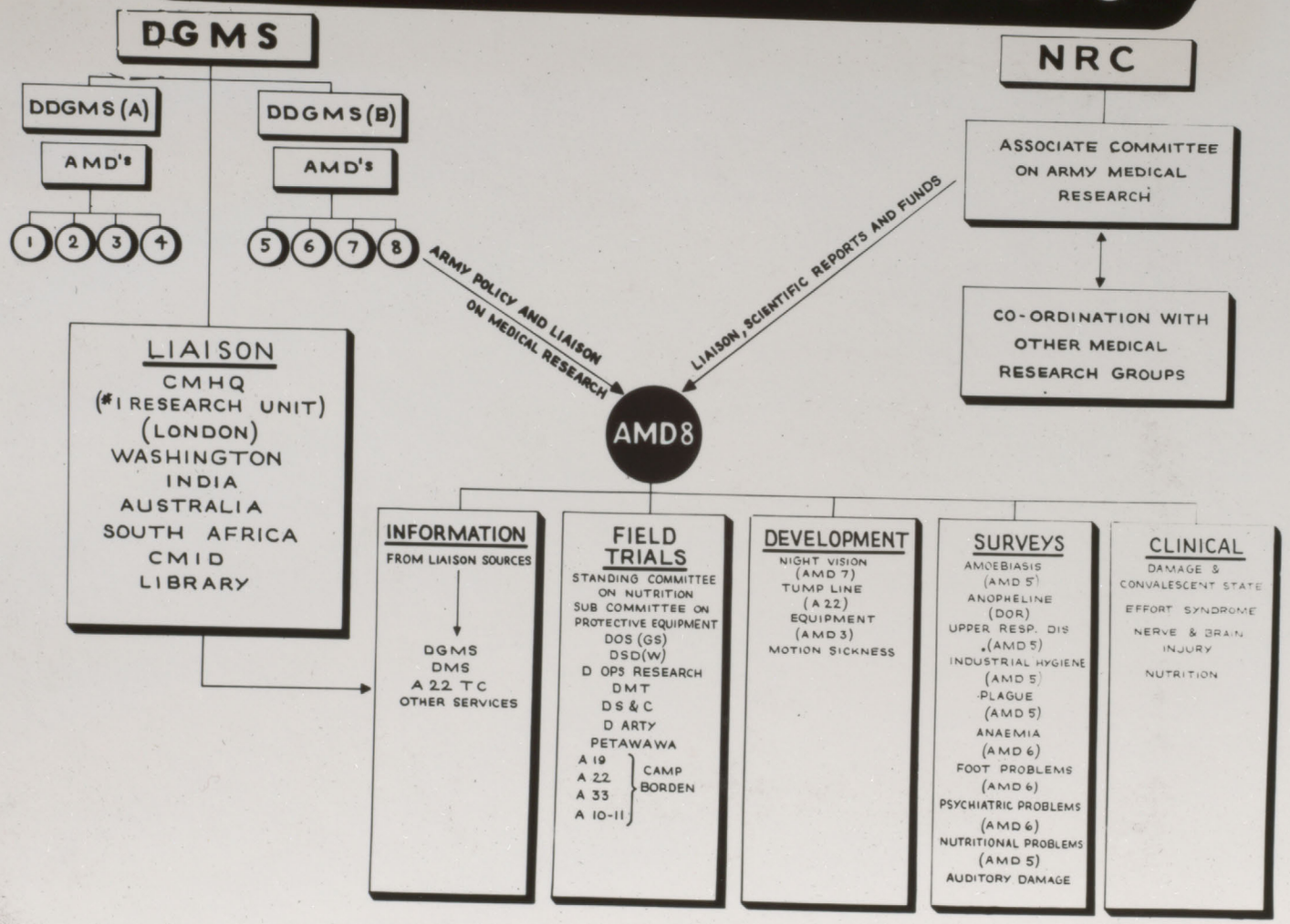
TEMPORARY INVESTIGATORS
CAPTAINS (8)

RATIONS (2)
EFFORT SYNDROME (1)
BACTERIOLOGY (1)
MEDICAL EQUIPMENT (2)
DAMAGE & CONVALESCENCE (1)
AMOEBIASIS SURVEY (1)

CHART ILLUSTRATING THE RELATIONSHP OF AMD 8 OF DGMS TO NRC & CIVILIAN, NAVAL & AIR FORCE MEDICAL RESEARCH UNITS



FUNCTIONAL CHART OF AMD 8



Army Med. No.1

Canadian Army Night Vision
Training and Testing Unit.

The Canadian Army Night Vision Training and Testing program was developed by research workers of the Research and Development Division, A.M.D.10, D.G.M.S., in collaboration with R.C.A.F. workers.

The necessity for such a method was recognized by the Director General of Medical Services, Major General G.B. Chisholm, from his field experience as an infantry scout in the last war.

The method of training and testing is now being used on a wide scale by the Canadian Army, both in Canada and overseas.

NIGHT VISION - OFFICERS TAKING INSTRUCTION IN SPECIAL DARK ROOM.

C.W.A.C. SERGEANT TESTING A SOLDIER, WHO IS SITTING IN THE SMALL BOOTH. C.W.A.C. PERSONNEL STAFF THE DEMONSTRATION AND TESTING UNITS THROUGHOUT CANADA.

REAR VIEW OF TESTING ASSEMBLY WITH C.W.A.C. SERGEANT RECORDING RESULTS.

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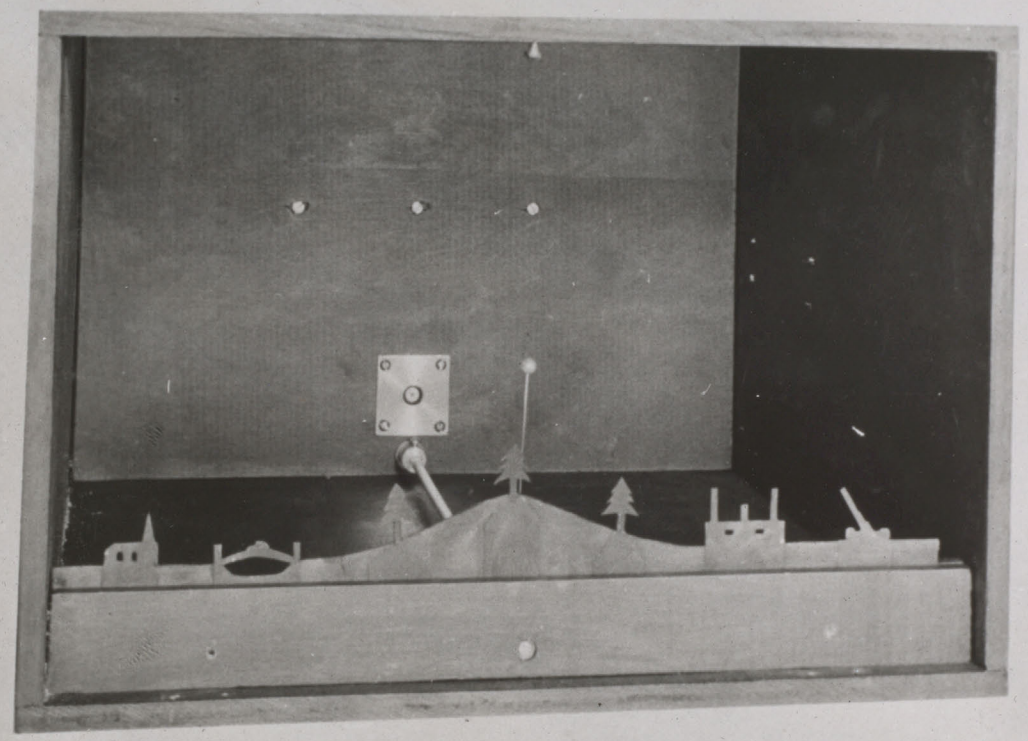
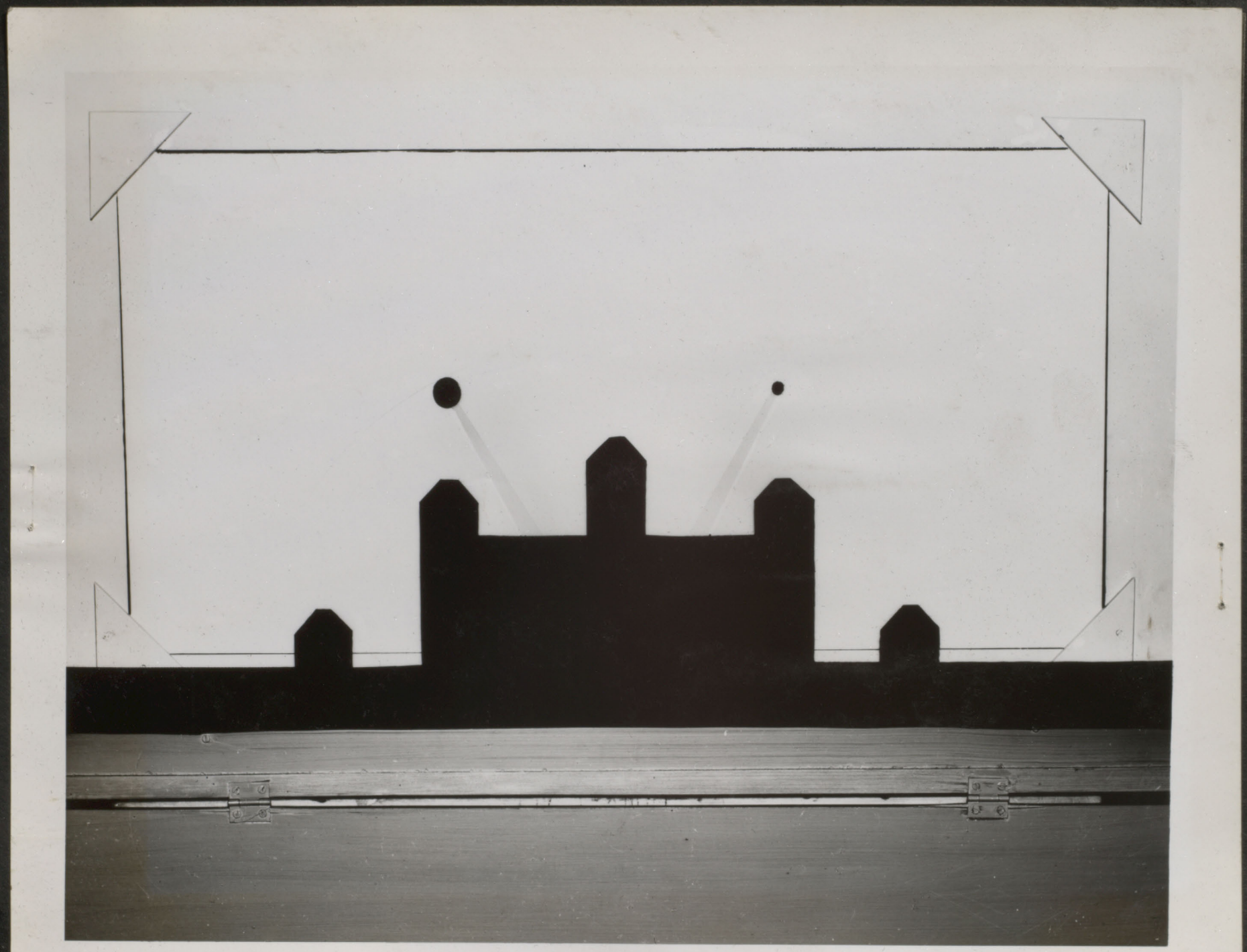
View of testing booth.



Trainer Box, front view, showing silhouette and pinhole projection lamp.



Front view of testing box, showing two size targets, five point silhouette, and opal glass screen.

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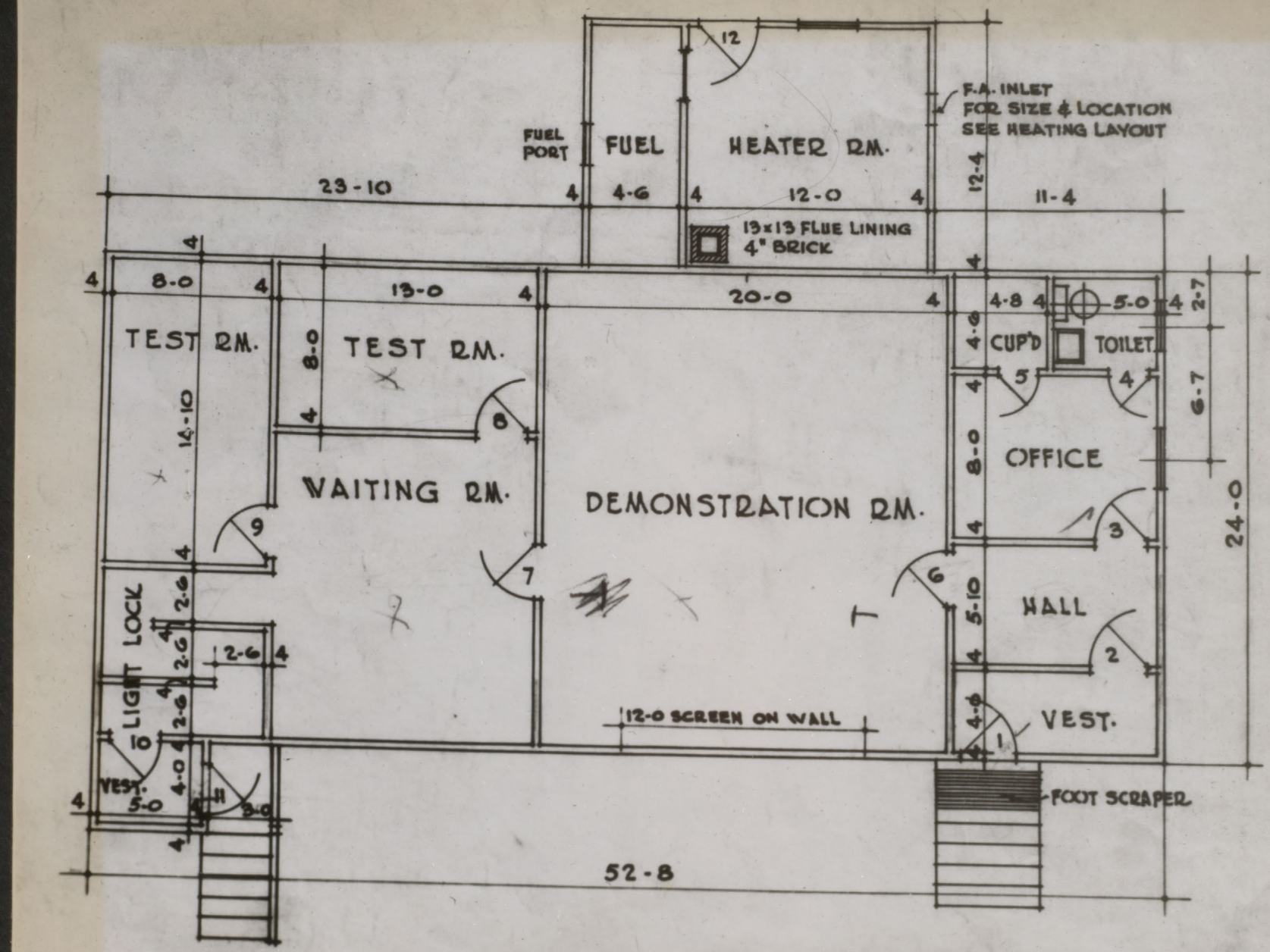
IN ORDER THAT MEN MAY BE GRADED UNIFORMLY IN ALL NIGHT VISION TESTING CENTRES IT IS ESSENTIAL THAT THE LIGHT LEVELS BE STANDARD EVERYWHERE THROUGHOUT THE COUNTRY. THE PHOTOELECTRIC CALIBRATOR PICTURED ABOVE WAS DESIGNED BY CAPTAIN A.J. CIPRIANI, A.M.D.10, D.G.M.S., FOR THIS PURPOSE. IT CAN BE OPERATED BY A TECHNICIAN WHO TOURS THE COUNTRY AND KEEPS ALL UNITS PERFECTLY ADJUSTED. THESE CALIBRATORS ARE NOW IN USE BOTH IN CANADA AND OVERSEAS.



FLOOR PLAN

1/8" = 1'-0"

FLOOR PLAN OF CANADIAN NIGHT VISION TRAINING AND TESTING UNIT.

A MOCK-UP OF THE SCOUT CAR WAS BUILT, AND THE INTERIOR WAS ILLUMINATED AND PAINTED IN VARIOUS WAYS IN ORDER TO DETERMINE THE BEST METHOD OF ILLUMINATION. THIS WAS TESTED BY USING THE CANADIAN ARMY NIGHT VISION TEST AS AN INDEX.

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MOCK-UP OF ARMY SCOUT CAR TO TEST INTERIOR ILLUMINATION.

Army Med. No.4

EVACUATION OF THE WOUNDED BY LAND

The tump-line principle for carrying supplies and evacuating wounded from the field.

This method of carrying supplies with the weight borne on the head through a head strap has been used by trappers and guides in the north country for decades. It is preferred to pack carrying of supplies and is more efficient.

CANADIAN ARMY PHOTO Crown Copyright PLEASE CREDIT

TUMPLINE DEMONSTRATION, TORONTO. DR. HOFMEYER (SOUTH AFRICA), CAPT. ARCHIE MACCALLUM, R.C.N., H/CAPT. E.B. ARCHIBALD, BRIG. J.C. MEAKINS, COL. DOWNIE (AUSTRALIA), AIR COMMODORE TICE, R.C.A.F. THE OFFICERS ARE EXAMINING TUMPLINE STRAPS USED IN THE NORTHLAND.

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H/CAPT. E.B. ARCHIBALD, AUXILIARY SERVICES, SHOWN ADJUSTING A LOAD, USED THIS METHOD IN THE LAST WAR FOR EVACUATING WOUNDED FROM THE TRENCHES.

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ADAPTED FOR USE WITH THE PACKBOARD, VERY HEAVY AND BULKY LOADS CAN BE CARRIED BY THIS METHOD.

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THE TUMP-LINE PRINCIPLE CAN ALSO BE ADAPTED FOR ONE-MAN CARRYING OF A CASUALTY. ILLUSTRATED ABOVE IS A LIGHT CHAIR WHICH PERMITS CARRIAGE OF A MODERATELY WOUNDED MAN.

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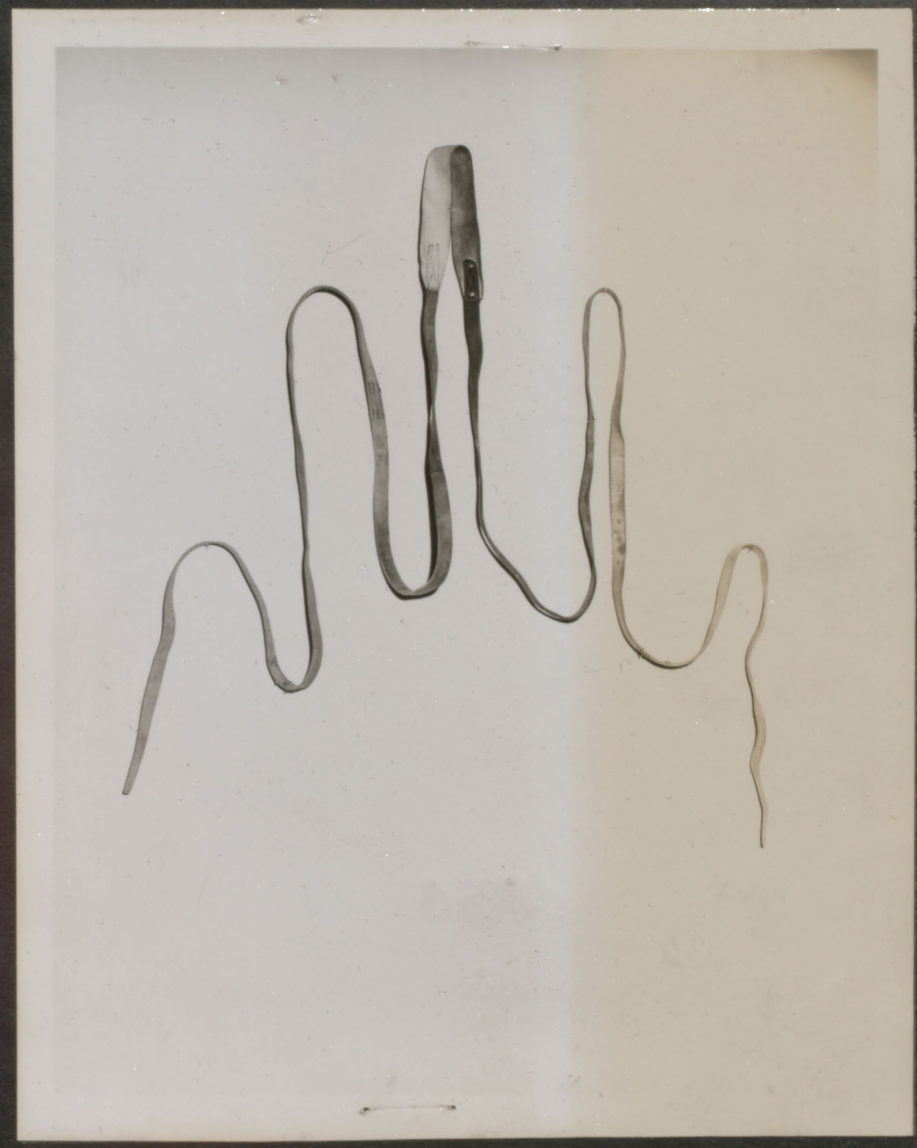
AN ADAPTATION OF THE TUMP-LINE PRINCIPLE TO CARRYING A CASUALTY ON A STRETCHER TOBOGGAN. THIS HAS BEEN FURTHER IMPROVED, THE CASUALTY BEING FIRMLY AND EASILY SUPPORTED BY CANVAS FLAPS WHICH ENVELOP THE BODY.



THE ORIGINAL TUMP-LINE STRAP FOR WRAPPING UP AND CARRYING BULKY EQUIPMENT.

HEAVY AND BULKY LOADS CAN ALSO BE CARRIED BY THIS METHOD WHEN ADAPTED TO A PACKBOARD AS SHOWN ABOVE.

ARCHIBALD GENERAL UTILITY BACK-BOARD WITH TUMPLINE, USED FOR CARRYING SOLDIER'S FULL PERSONAL EQUIPMENT.

TUMP-LINE AND U.S. Q.M. CORPS PACK-BOARD FOR CARRYING SOLDIER'S EQUIPMENT.

U.S. Q.M. Corps pack-board used for carrying mortar base.

MORTAR BARREL LASHED TO ARCHIBALD BACK-BOARD AND CARRIED BY TUMP-LINE METHOD.

ARCHIBALD BACK-BOARD USED FOR CARRYING BALE OF WIRE.

UNUSUAL LOADS WERE FASTENED WITH EASE TO THE ARCHIBALD BACK-BOARD.

Stretcher Trials

A22 Training Centre, Camp Borden

Extensive trials of different British, American and Canadian stretchers were made under all kinds of operational conditions. Detailed submission to Ordnance for a new, light-weight stretcher resulted.

SEMI-RIGID, COLLAPSIBLE LITTER (U.S.) UNDER FIELD TRIAL

ONE-MAN TUMP-LINE CARRY VS. TRADITIONAL FOUR-MAN SHOULDER CARRY. CAMP BORDEN.

HIS FEET AND CARRIES THE CASUALTY OVER A MILE WITHOUT A REST.

CANADIAN ARMY PHOTO (Crown Copyright) PLEASE CREDIT

ONE-MAN TUMP-LINE CARRY OF SPECIAL STRETCHER TOBOGGAN. TORONTO.

SIMPLE ONE-MAN CARRY USING ARCHIBALD GENERAL UTILITY BACK-BOARD AND LEATHER STRAPS. THE SAME LOOPS WHICH ARE USED TO PUT OVER THE HANDLES OF A STRETCHER ARE IN THIS CASE PUT OVER THE THIGHS OF THE CASUALTY. THIS IS DONE WHILE THE CASUALTY IS ON THE GROUND, THEN THE CARRIER LIES BESIDE HIM. PUTS HIS ARMS IN THE SHOULDER STRAPS AND HIS HEAD IN THE TUMP-LINE. THEN, BY MEANS OF THE ARCHIBALD METHOD, HE GETS TO HIS FEET AND CARRIES THE CASUALTY OVER A MILE WITHOUT A REST.

TUMP-LINE SINGLE MAN STRETCHER CARRY.

TOBOGGAN STRETCHER FOR ONE-MAN DRAG. SMOKE SCREEN EXERCISE, CAMP BORDEN.

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WHEELED TOBOGGAN STRETCHER FOR ONE-MAN PULL OR TUMP-LINE CARRY. HIGH PARK, TORONTO.

FLOTATION DEVICE FOR CARRYING CASUALTY ACROSS STREAM. STRETCHER DEVELOPMENT, CAMP BORDEN.

TUMP-LINE STRETCHER DEVELOPMENT - FLOTATION DEVICE.

River Crossing by Standard Stretcher Boat

River Crossing by Trolley

U.S. aluminum pole litter. This was the best general purpose stretcher

Army Med. No.7

NUTRITIONAL SURVEY

In order to assess the nutritional state of draftees entering the Army from Quebec rural areas 100 men were examined in the most extensive and scientific way at District Depot No.4, Longueuil, Quebec.

The survey was repeated on the same men after two months of basic training to determine the effect of Army life and Army feeding on nutritional status. The survey gave valuable information concerning these, and on the eating habits of the men and the value of proper preparation and serving of their food.

The study was carried out by officers of the Research and Development Division, A.M.D.10, D.G.M.S., along with Dr. M.E.F. Hunter, biochemist, Royal Victoria Hospital, and her staff.

PERSONNEL OF TEST STAFF: - R.C.A.M.C. NURSING SISTER, DR. M.E.F. HUNTER, LT. COL. R.M. KARK AND MISS THERESE MARION (FRONT ROW).

A CAREFUL DIETARY HISTORY WAS OBTAINED IN EVERY CASE BY DR. M.E.F. HUNTER.

THE MEN WERE TAKEN INTO HOSPITAL FOR 24 HOURS FOR SPECIAL EXAMINATIONS, AND IN ORDER TO HAVE A COMPLETE CHECK ON COLLECTION OF URINE AND BLOOD SAMPLES FOR VITAMIN ANALYSES. MAJ. T.S. SMITH EXAMINING PATIENT.

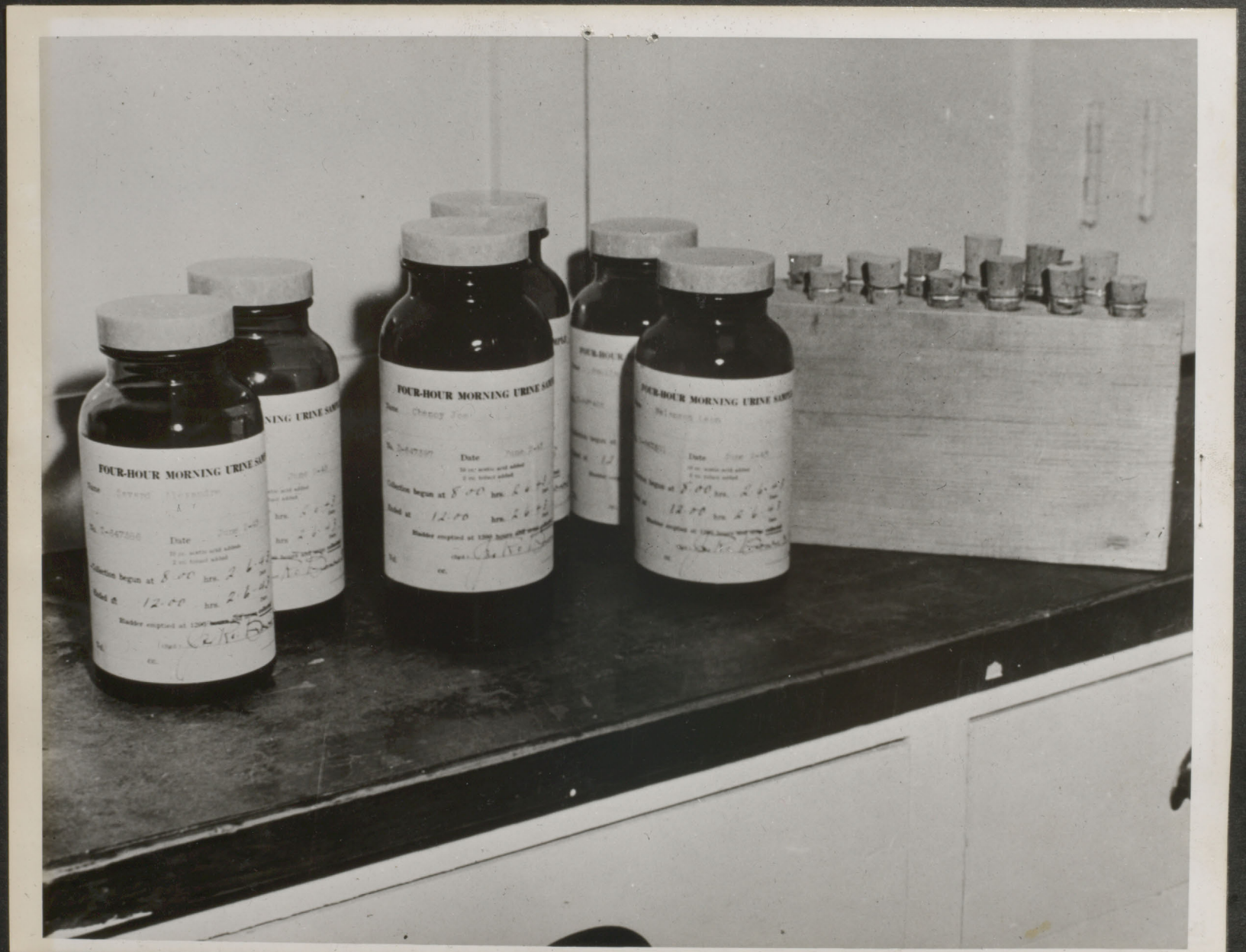
LT. COL. R.M. KARK EXAMINING SUBJECT'S EYES WITH SLIT LAMP TO DETECT RIBOFLAVINE DEFICIENCY.

A QUANTITATIVE MEASURE WAS OBTAINED OF ABILITY TO FEEL MINUTE VIBRATIONS. VIBRATION SENSE IS IMPAIRED WITH DEFICIENCY OF VITAMIN B_1 (THIAMINE).

PHYSICAL FITNESS TESTS WERE DONE ON ALL MEN. ILLUSTRATED IS THE HARVARD STEP-UP TEST, WHICH IS CARRIED OUT TO THE BEAT OF A METRONOME.

VITAMIN LOAD TESTS WERE MADE. THIS INVOLVES MEASUREMENT OF THE AMOUNT OF VARIOUS VITAMINS IN THE URINE SIX HOURS AFTER AN INTRAMUSCULAR DOSE OF THE VITAMINS.


21
22



URINE AND BLOOD SAMPLES WERE COLLECTED AND TAKEN AT ONCE TO THE ROYAL VICTORIA HOSPITAL FOR VITAMIN DETERMINATIONS.

A STANDARD MEAL WAS FED DURING THE PERIOD OF VITAMIN ESTIMATIONS.

SPECIAL APPARATUS FOR VITAMIN ANALYSIS - ROYAL VICTORIA HOSPITAL.

REFINED CHEMICAL TECHNIQUES WERE USED IN THE NUTRITION LABORATORY, ROYAL VICTORIA HOSPITAL, TO EVALUATE THE NUTRITIONAL STATUS OF THE MEN.

Army Med. No.14

METABOLIC ASPECTS OF DAMAGE AND CONVALESCENCE

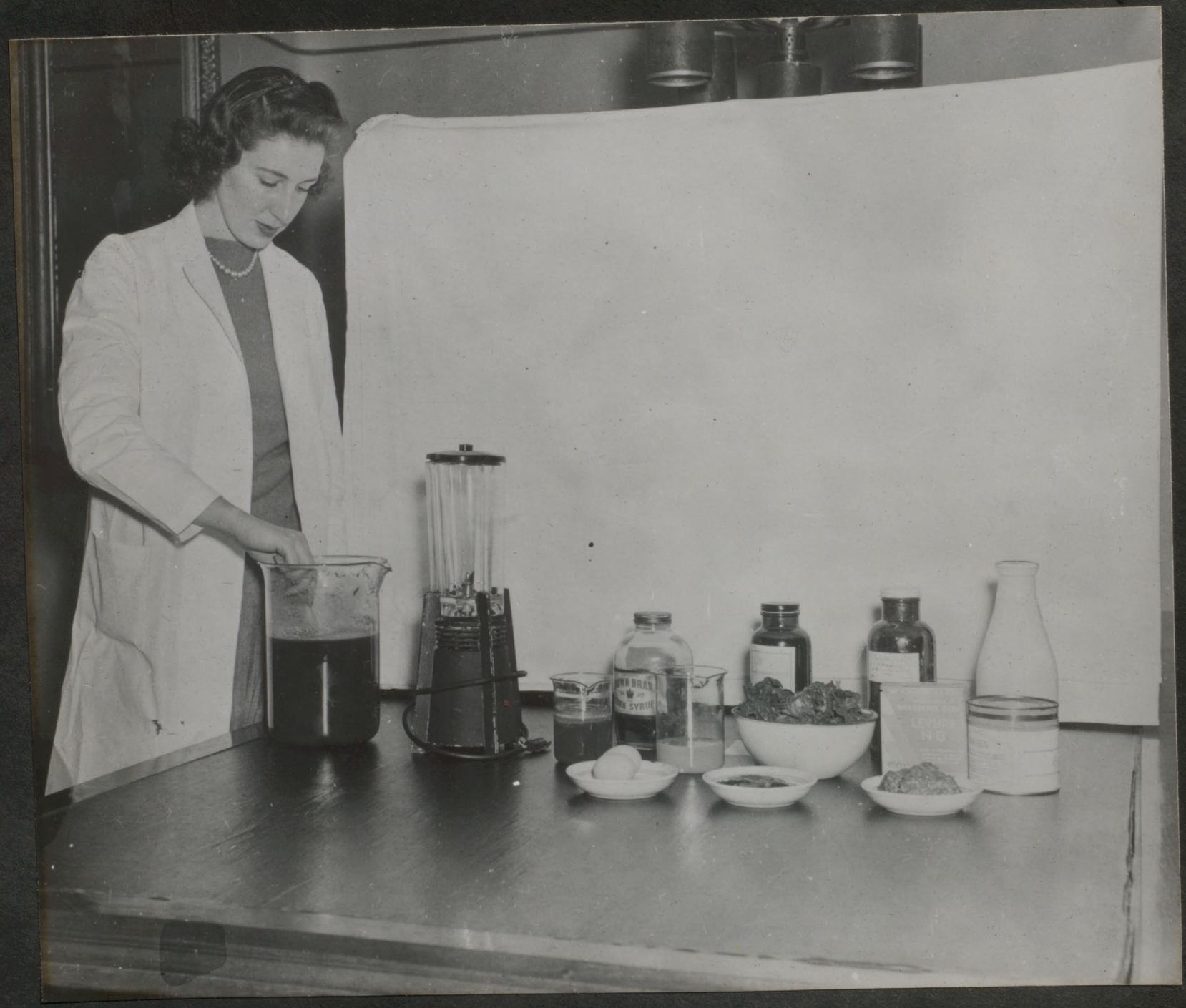
Great chemical changes occur in the body as a result of wounds, burns, operations, etc. These are only being gradually understood. Out of this study has come an appreciation of the very high caloric diets and large amounts of nitrogen containing foods that must be fed to these patients to restore them to health. This work has already led to specific proposals for the improvement of diets for convalescent patients.

This work is being conducted at the Royal Victoria Hospital under the direction of Dr. J.S.L. Browne and Capt. J.A.F. Stevenson, R.C.A.M.C.

CONVALESCENT BURN CASE BEING WEIGHED

Patient who suffered severe burns to face, ears, and arms. During the first six weeks of his convalescence he lost 35 pounds. His diet and general therapy were then put under this study, and in the eight weeks since then he has gained 24 pounds, and his skin is in excellent condition for grafting the burned areas.

RECOVERING BURN CASE ON SPECIAL METABOLISM WARD. THIS SHOWS THE APPARATUS FOR INSURING COMPLETE COLLECTION OF URINE, WHICH IS ABSOLUTELY NECESSARY FOR ACCURATE JUDGEMENT OF PROGRESS.



PREPARATION OF SPECIAL CONVALESCENT DIETS

EXAMPLE OF HOW EXPERIMENTAL DIETS ARE PREPARED FOR SEVERELY WOUNDED OR SICK SOLDIERS. PORTIONS OF THE VARIOUS FOODS SHOWN ON THE RIGHT ARE MIXED TOGETHER IN THE POWERFUL STIRRING MACHINE SHOWN PRODUCING A SOUPY MIXTURE WHICH THE DIETITIAN IS SEEN EXAMINING. THIS MAY BE FED BY STOMACH TUBE TO THOSE PATIENTS WHO ARE TOO SICK TO TAKE SUFFICIENT FOOD BY MOUTH.

Army Med. No.12

Hydroponic (Soil-less) Culture of Vegetables

The soil at Goose Bay, Labrador, consists of acid sand, save for a rim of muskeg which supports the trees seen in the background of the following pictures, but will not nourish vegetables.

In order to supply the garrison with fresh vegetables 86 wooden hydroponic beds were built, giving a growing surface of one acre. The vegetables were planted in sand which was neutralized, and then sprayed each day with a solution of chemical fertilizers. The growing season is short, but the days are long and growth is very rapid.

Many excellent vegetables were grown during the first season in 1943, and these helped to supply the garrison. The project had great morale value, and home coming patrols often walked through the planted area and fingered the growing vegetables.

The project was carried out jointly by the Dept. of Horticulture, Dominion Experimental Farm, and R.C.A.M.C. officers from D.G.M.S. The project is thought to be economically sound, and is being taken over by the Directorate of Supply & Catering for a full scale run in 1944.

RECOVERING BU
ON SPECIAL ME
WARD. THIS S
APPARATUS FOR
ING COMPLETE
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IS ABSOLUTELY
ARY FOR ACCU
JUDGEMENT OF

Mr. John Gilbey, Dominion Experimental Farm, and Major R. Kark, R.C.A.M.C. Nutrition Officer, examining a bed of lettuce.

8 untrained personnel were used to tend the hydroponic beds under the direction of Mr. John Gilbey.


RE 1028-5

RADISHES - THREE CROPS WERE PRODUCED.

POTATOES.

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COL. R.H. WEBB, DIRECTOR OF CATERING AND MESSING, AND MAJOR R.M. KARK, R.C.A.M.C., EXAMINING VEGETABLES GROWN BY HYDROPONIC CULTURE AT GOOSE BAY. THESE VEGETABLES WERE PLACED ON EXHIBITION BEFORE THE ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES AT THEIR MEETING IN PHILADELPHIA IN OCTOBER, 1943.

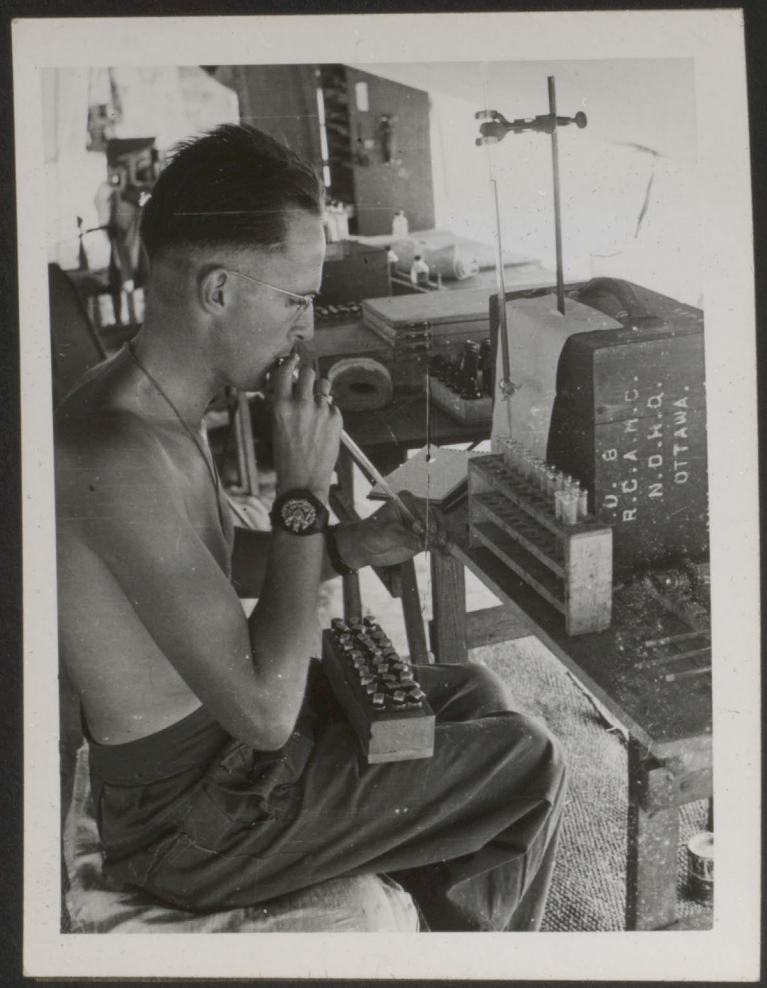
THE RESEARCH DIVISION ORGANIZED A NUTRITION TEAM AND MOBILE FIELD LABORATORY WITH LT.COL. R.M. KARK IN CHARGE. IT WAS FLOWN TO INDIA AT THE REQUEST OF THE INDIAN GOVERNMENT AND MADE VALUABLE STUDIES ON THE NUTRITION OF TROOPS IN INDIA AND BURMA.

Nutrition Team - India.

W/OTT E.D. Pease, Lt. Col. R.M. Kark and Lt. H.F. Aiton near mobile nutrition laboratory.

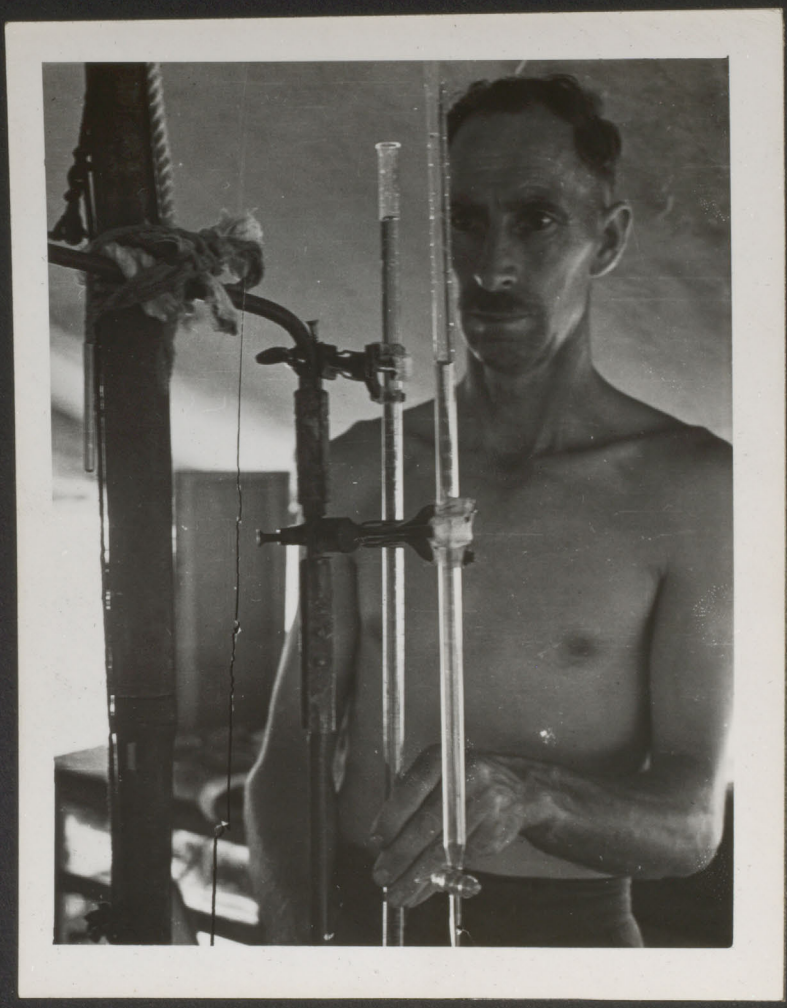
Native troops awaiting nutrition and physical fitness survey.

MOBILE NUTRITION TEAM IN BURMA. LEFT TO RIGHT, W/O TT E.D. PEASE, LT. COL. R.M. KARK AND LT. H.F. AITON.



LT. AITON

THE ENTIRE LABORATORY EQUIPMENT COULD BE PACKED INTO 36 SMALL BOXES.



W/O PEASE

CARRYING OUT CHEMICAL TESTS DURING NUTRITION TRIAL.

Army Med. No.3

NUTRITION

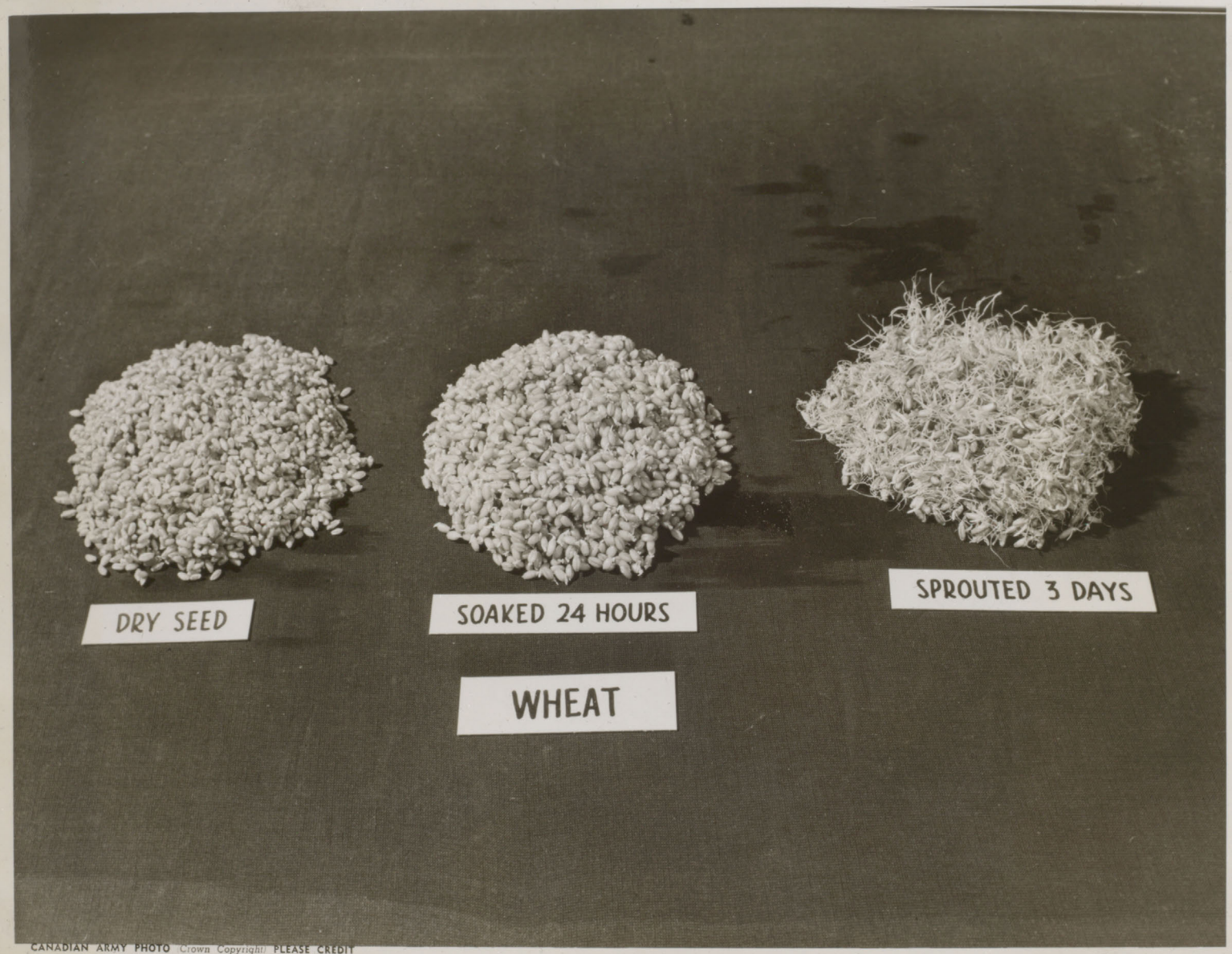
Sprouted Seeds as Sources of Vitamin C

The sprouts of some seeds manufacture Vitamin C. at a rapid rate. The dry seed may contain none of this vitamin, whereas the seed sprout even after three or four days may be a rich source. Seed sprouts can therefore be used as nutritional supplements, which is perhaps why the Chinese have used them for so many centuries.

This project was initiated in co-operation with the Department of Biology, National Research Council, Canada, who determined which seeds were in good supply in Canada and which produced most Vitamin C.

Over 33 varieties were sprouted and analyzed, The project then continued in the Department of Chemistry, Macdonald College, where simple methods of sprouting under field conditions were worked out, and dainty and palatable recipes were made up. The latter were fed to C.W.A.C. personnel at the Officers' Training Centre, and likes and dislikes were noted.

Sprouted seeds have been used by the garrison at Goose Bay, Labrador, during the past winter (1943-44) as a source of Vitamin C.



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DRY SEED

SOAKED 24 HOURS

SPROUTED 3 DAYS

SPROUTED 5 DAYS

COMMON VETCH

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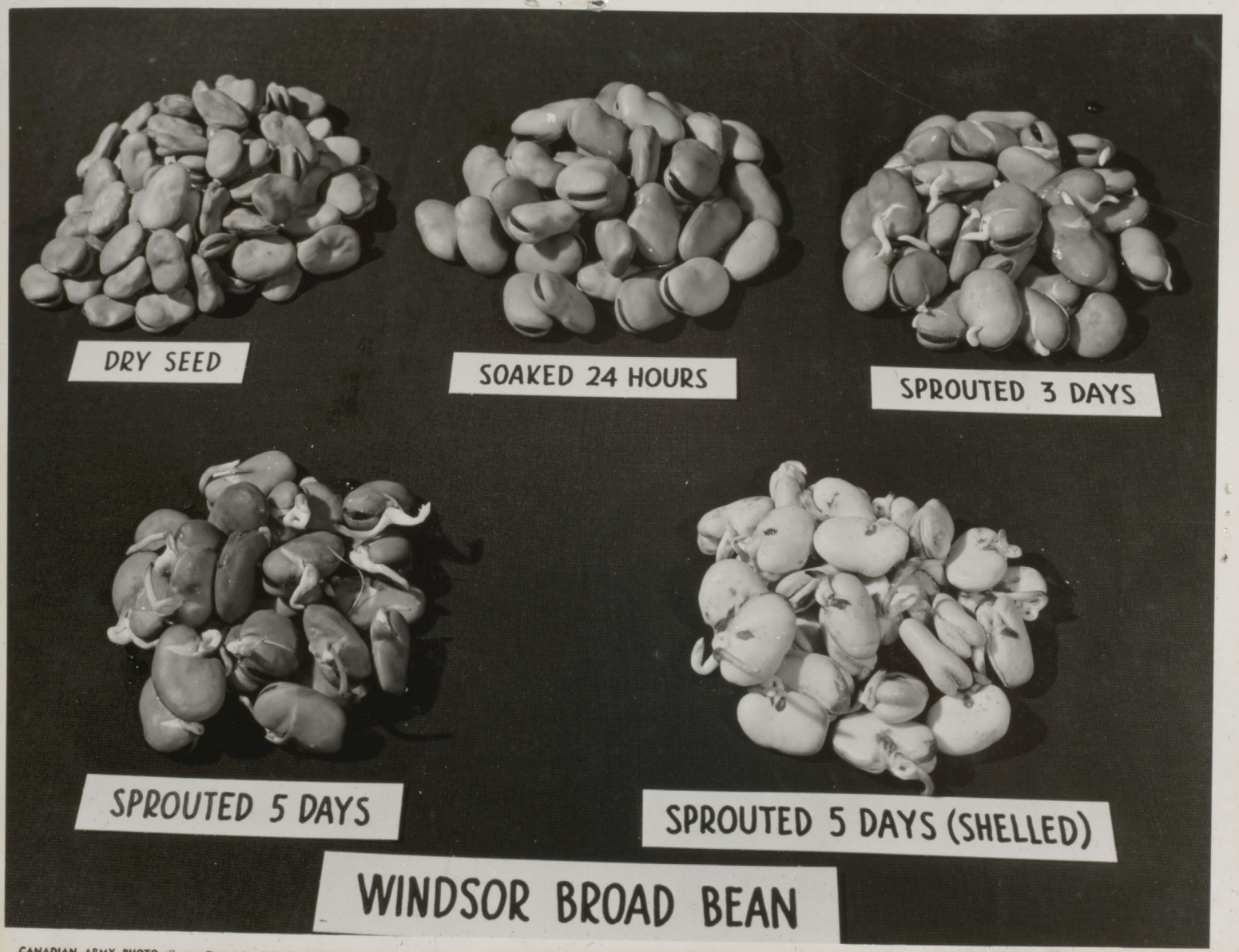

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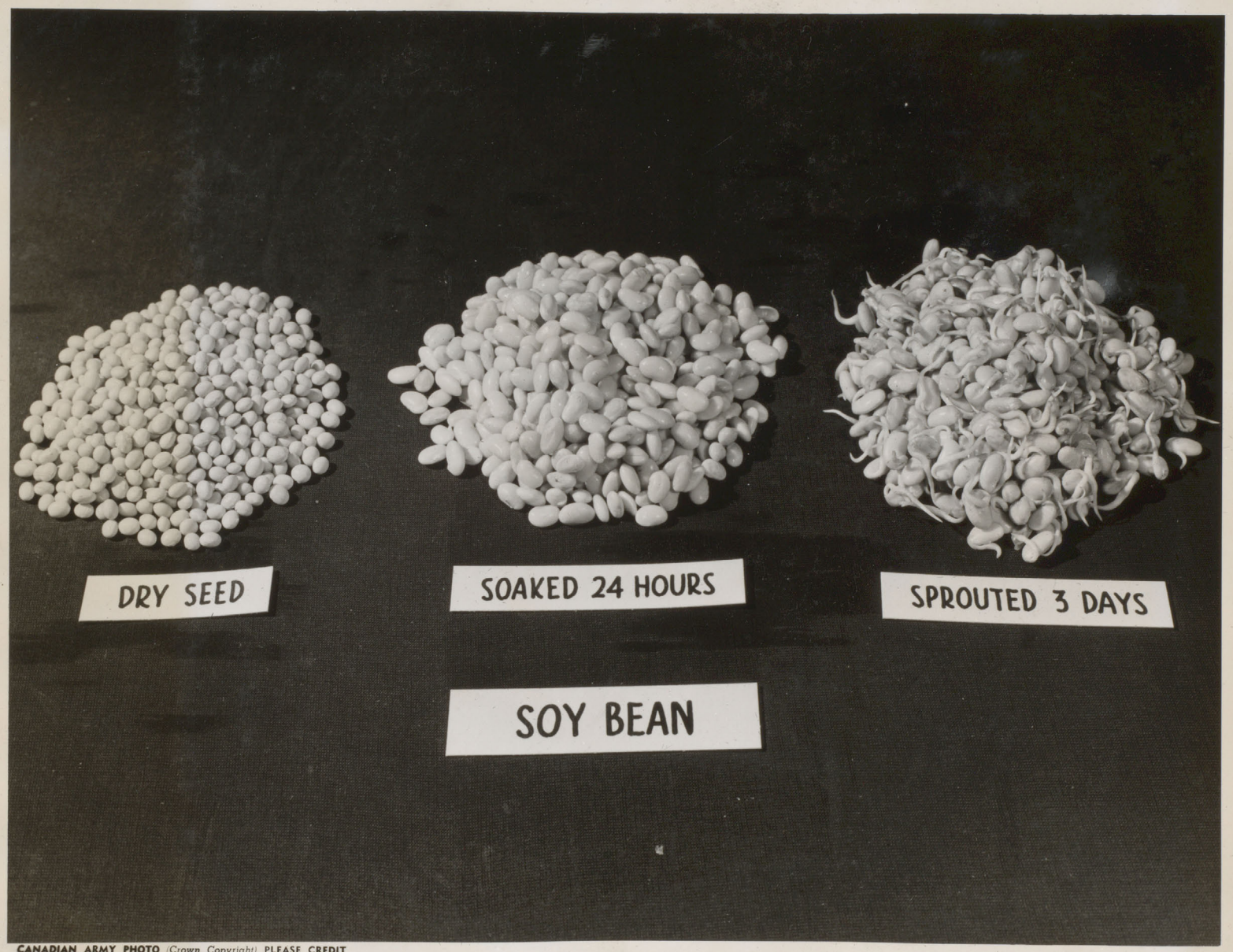

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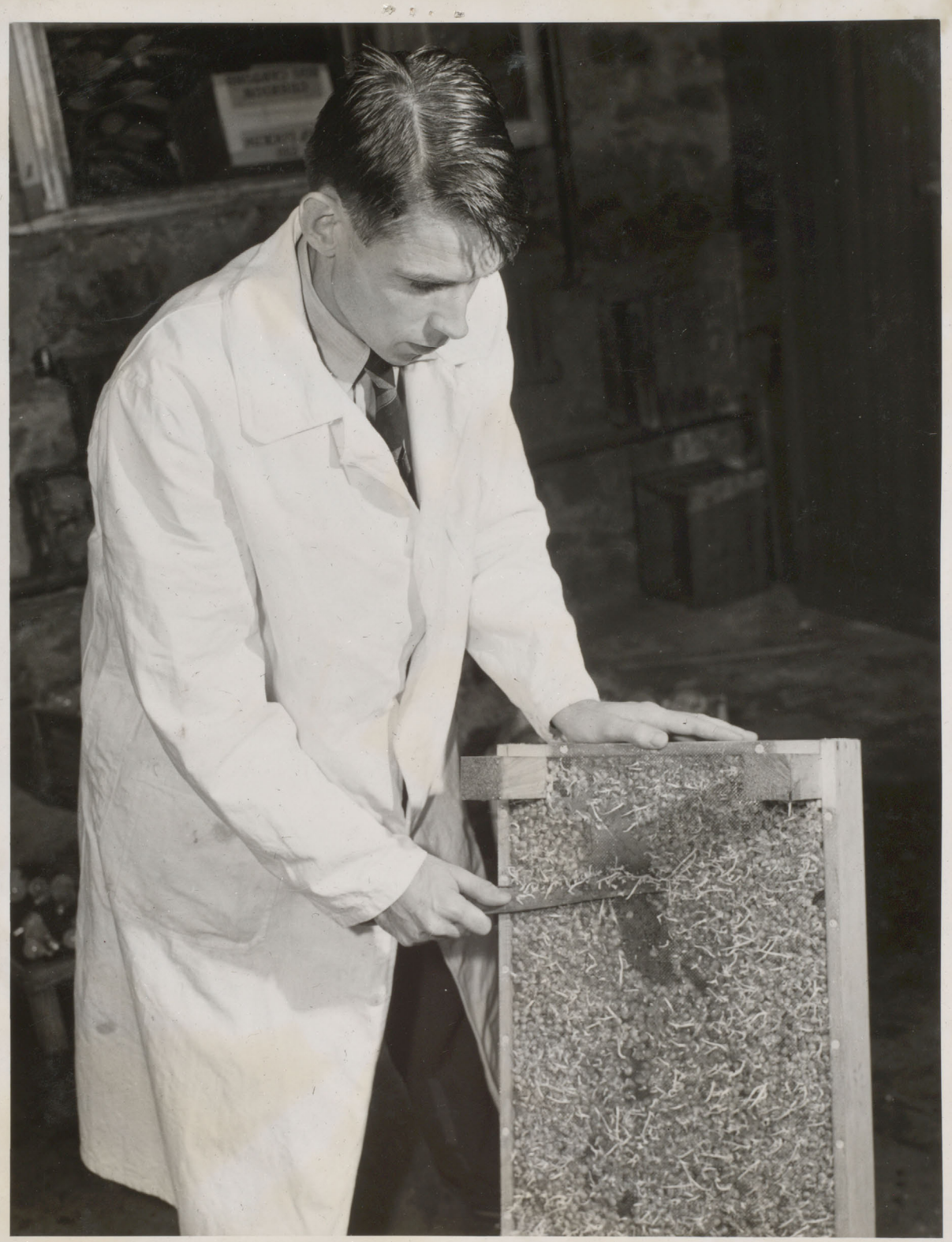
SIMPLE SEED CONTAINER FOR SPROUTING UNDER FIELD CONDITIONS.



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HARVESTING SEED SPROUTS.

SPROUTED SEEDS - VARIOUS STAGES OF GROWTH.

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SPROUTING FIELD PEAS GROWING IN RACKS.

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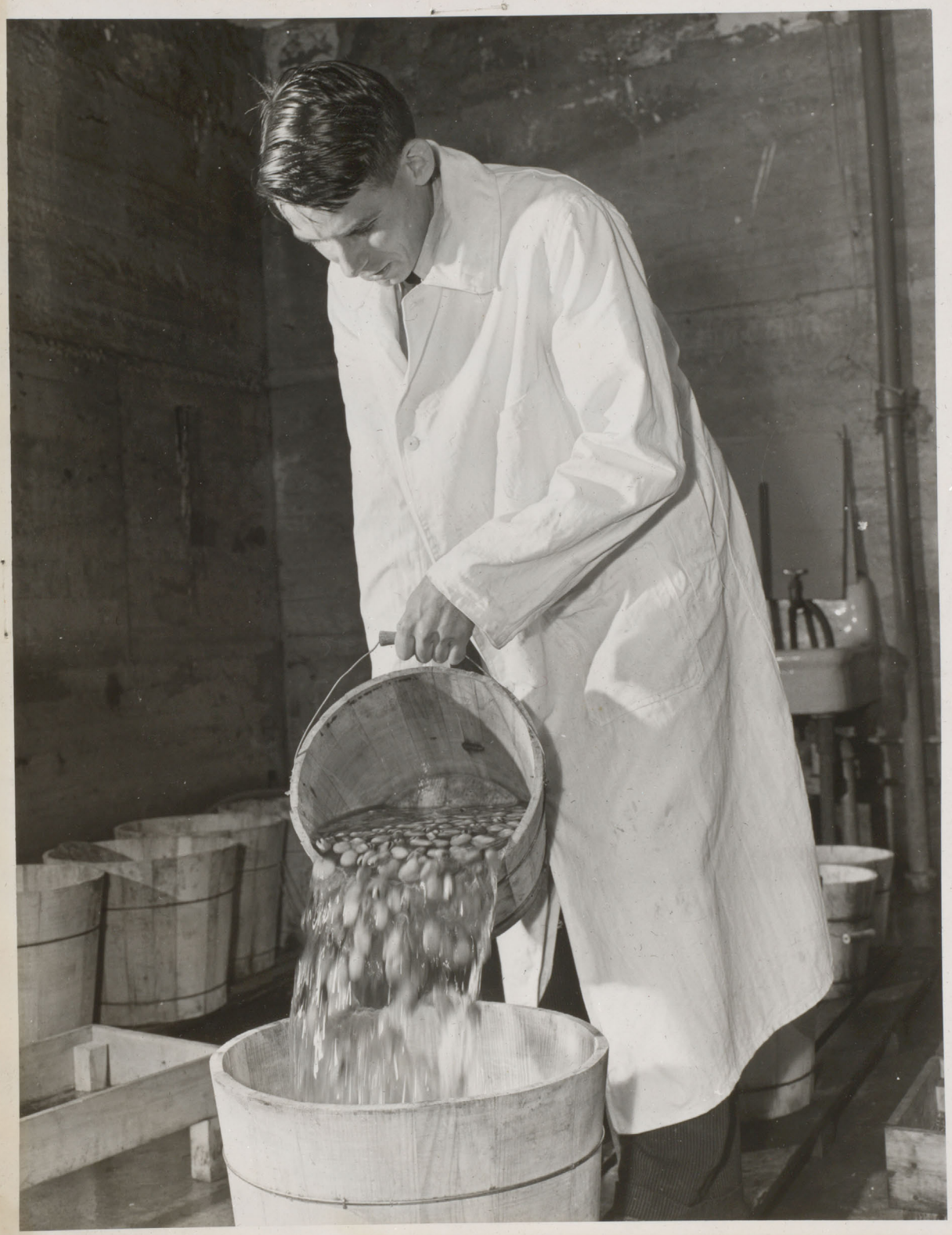
MR. W. ANDREAE, MACDONALD COLLEGE, EXAMINING SEED SPROUTS.



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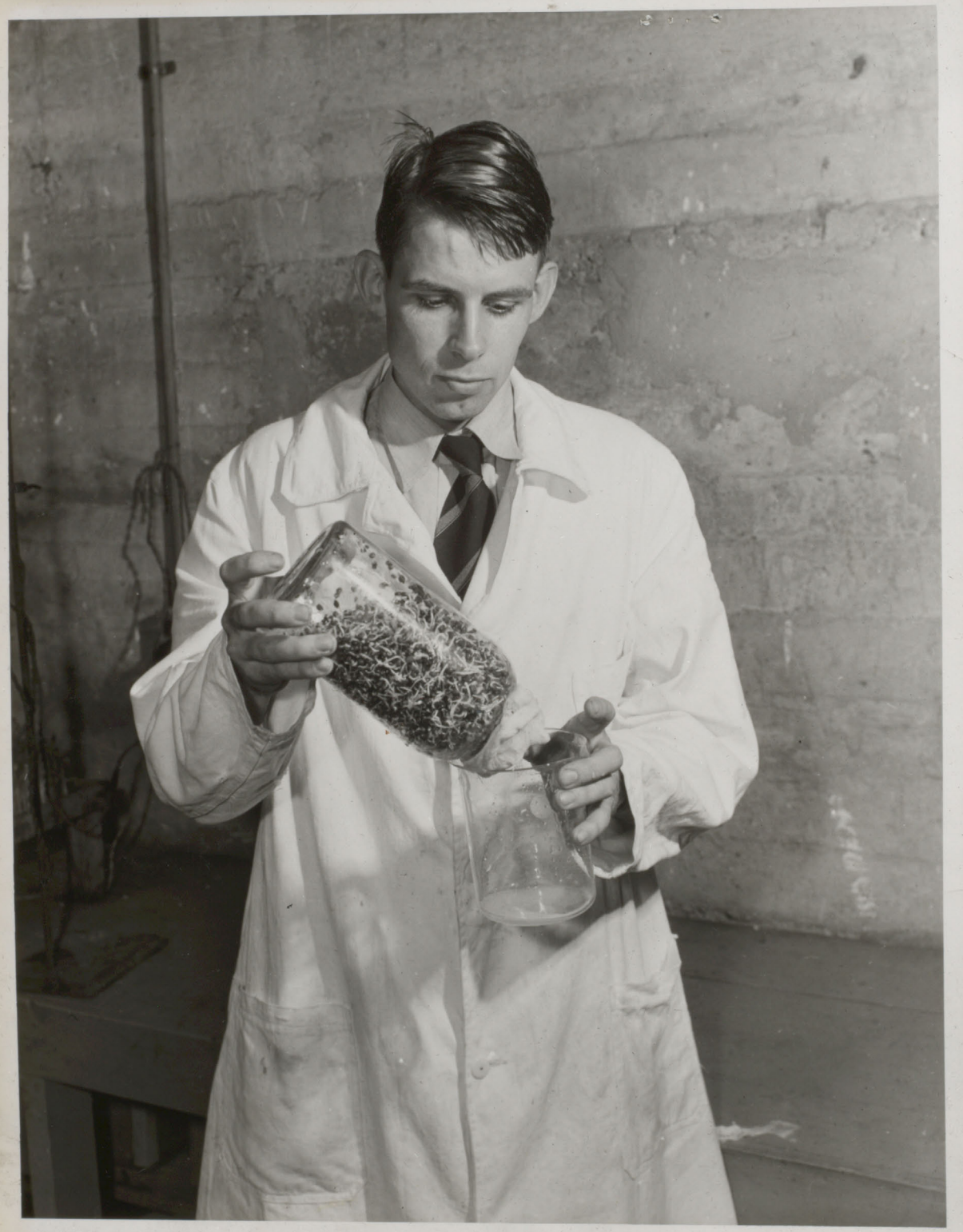

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DECANTING EXCESS WATER

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DR. W. ANDREAE AND MISS E.A. CHALMERS CONDUCTING VITAMIN ASSAYS OF SPROUTS.

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MANY TESTS WERE MADE TO FIND ATTRACTIVE AND PALATABLE RECIPIES FOR SERVING SPROUTS. THESE WERE CARRIED OUT IN THE DEPARTMENT OF HOME ECONOMICS, MACDONALD COLLEGE.

CANADIAN ARMY PHOTO *(Crown Copyright)* PLEASE CREDIT

SOME SPROUTS ARE SERVED ALONG WITH THE SEED; OTHERS ARE SERVED SEPARATELY.

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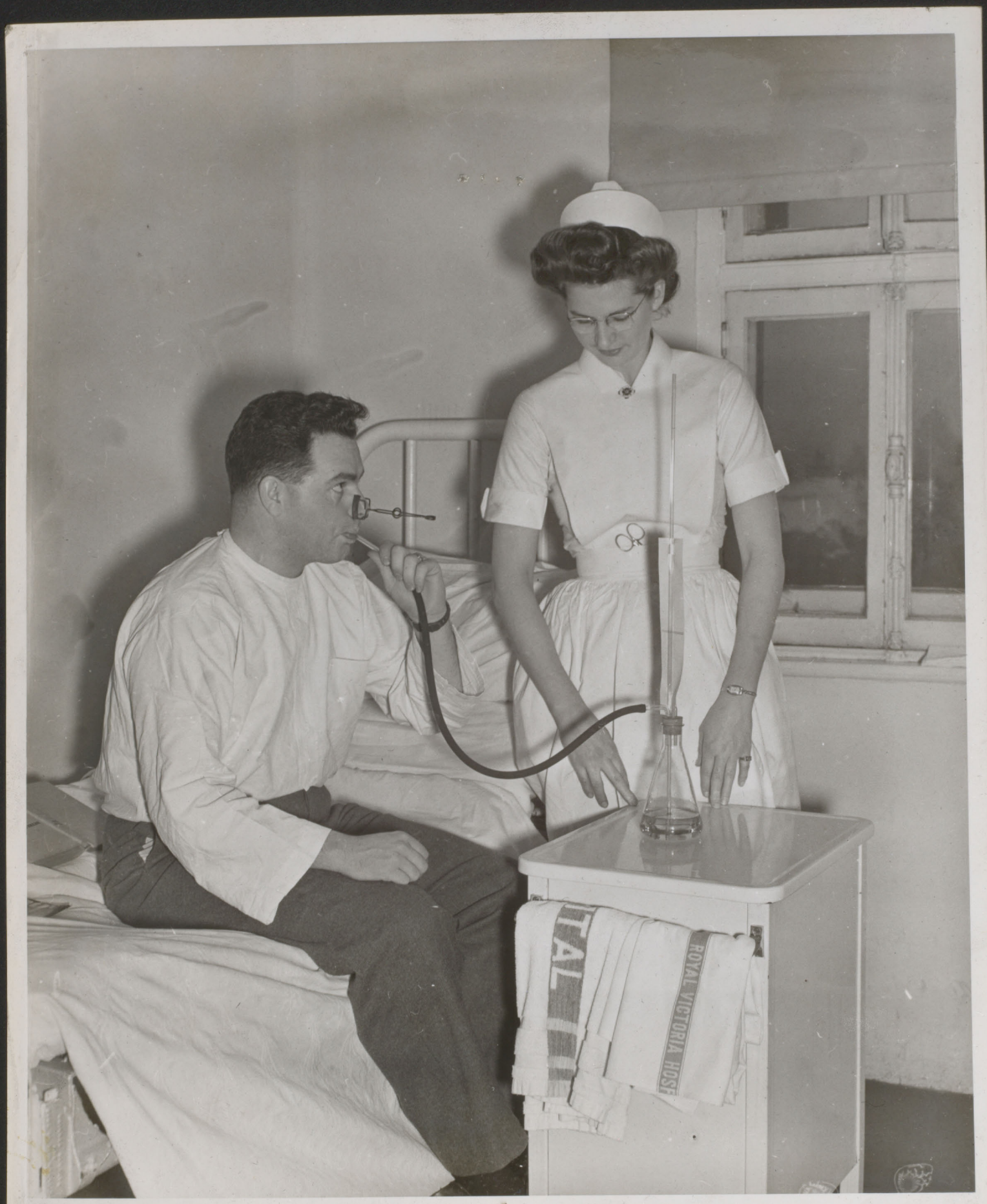
SPROUTS - TAKE YOUR CHOICE.

Army Med. No.2

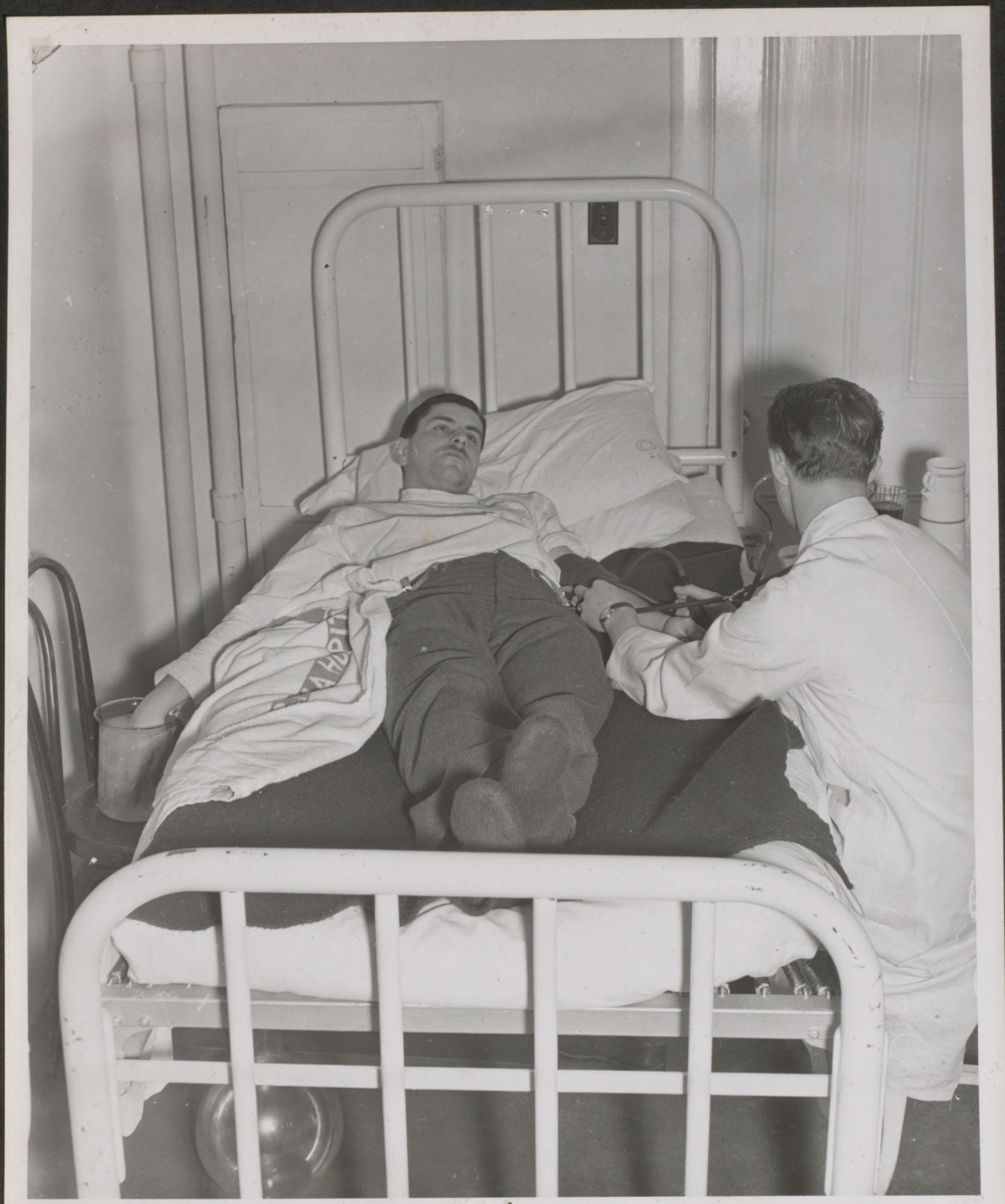
Effort syndrome is a functional condition in which rapid fatigue, breathlessness, chest pain and palpitations of the heart occur after moderate effort. It is a great cause of wastage of manpower. After the last war 40,000 such cases were pensioned by the British Government.

A study of this condition is being carried out at McGill University in the Department of Physiology and in the University Clinic, Royal Victoria Hospital. It has now (1944) been linked to an extensive investigation of wound damage and convalescence. Effort syndrome in many ways resembles the condition of a convalescent patient, who has been forced to activity too soon.

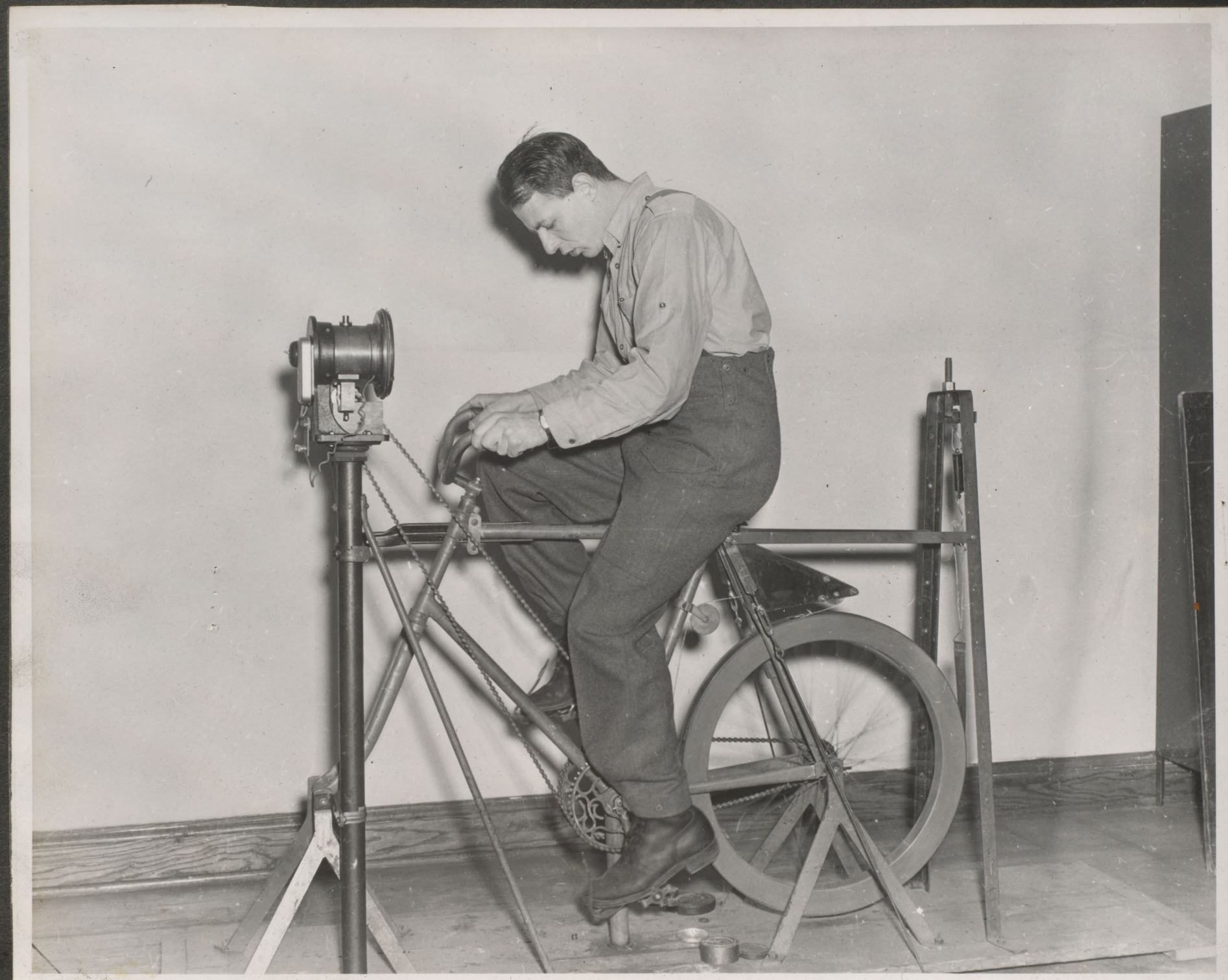


40 MM. TEST - THE SOLDIER HOLDS HIS BREATH AND BLOWS INTO A TUBE SO AS TO HOLD UP A COLUMN OF WATER 10 INCHES HIGH (EQUAL TO 40 MM. MERCURY). THIS TEST GIVES AN INDICATION OF ENDURANCE OR STAMINA.

HARVARD FATIGUE LAB. STEP TEST - THE SOLDIER STEPS UP AND DOWN ON AN EIGHTEEN INCH STEP AT THE RATE OF 30 TIMES A MINUTE FOR FIVE MINUTES. HIS PULSE RESPONSE IS COUNTED, WHICH GIVES AN INDICATION OF PHYSICAL FITNESS.

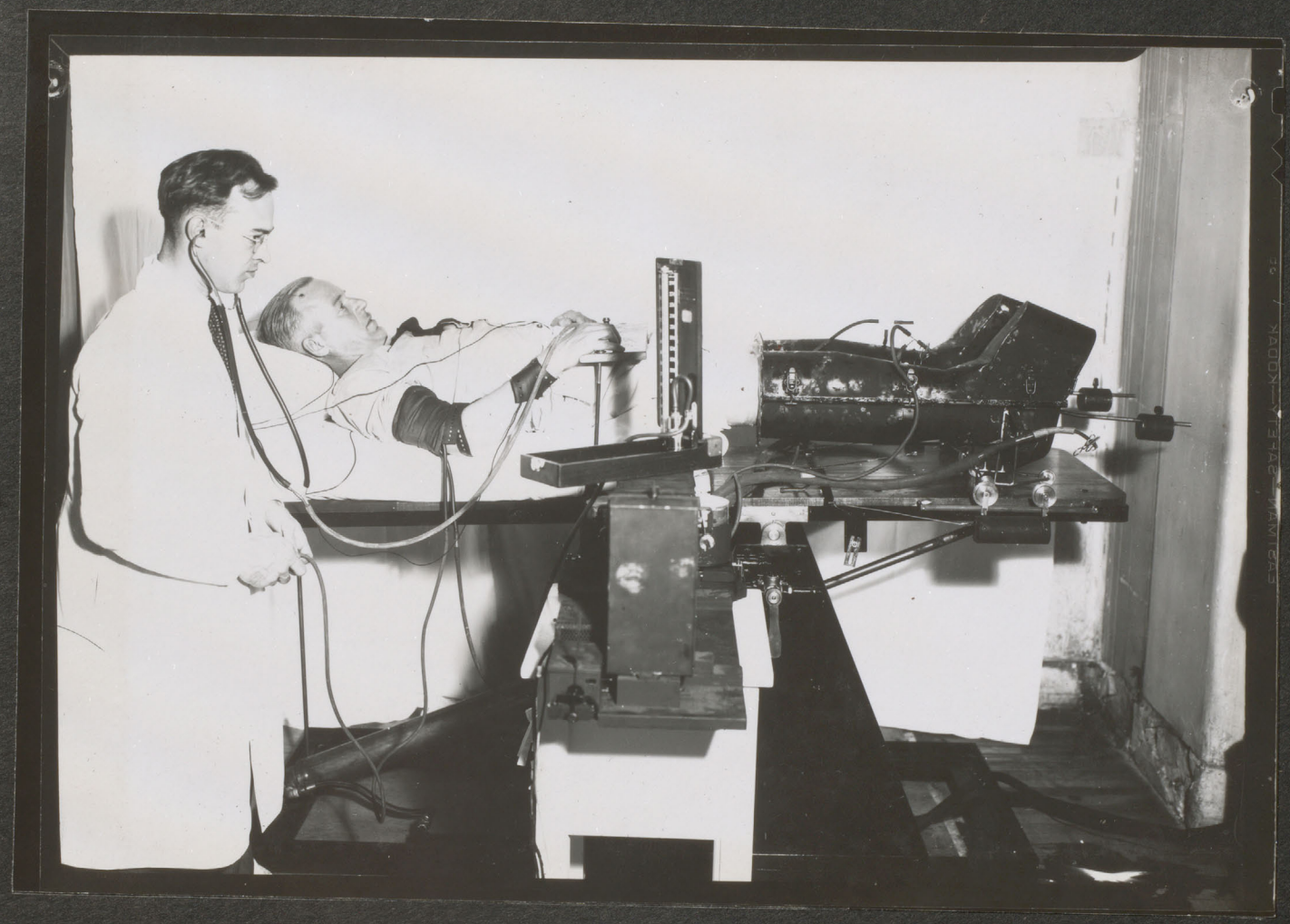


COLD PRESSOR TEST - THIS TEST FOR CARDIO-VASCULAR STABILITY MEASURES THE BLOOD PRESSURE CHANGES ACCOMPANYING A 60 SEC. IMMERSION OF ONE HAND IN ICE WATER.



BICYCLE ERGOMETER - THIS MACHINE IS USED FOR GIVING MEASURED AMOUNTS OF MECHANICAL WORK FOR A MAN TO PERFORM.

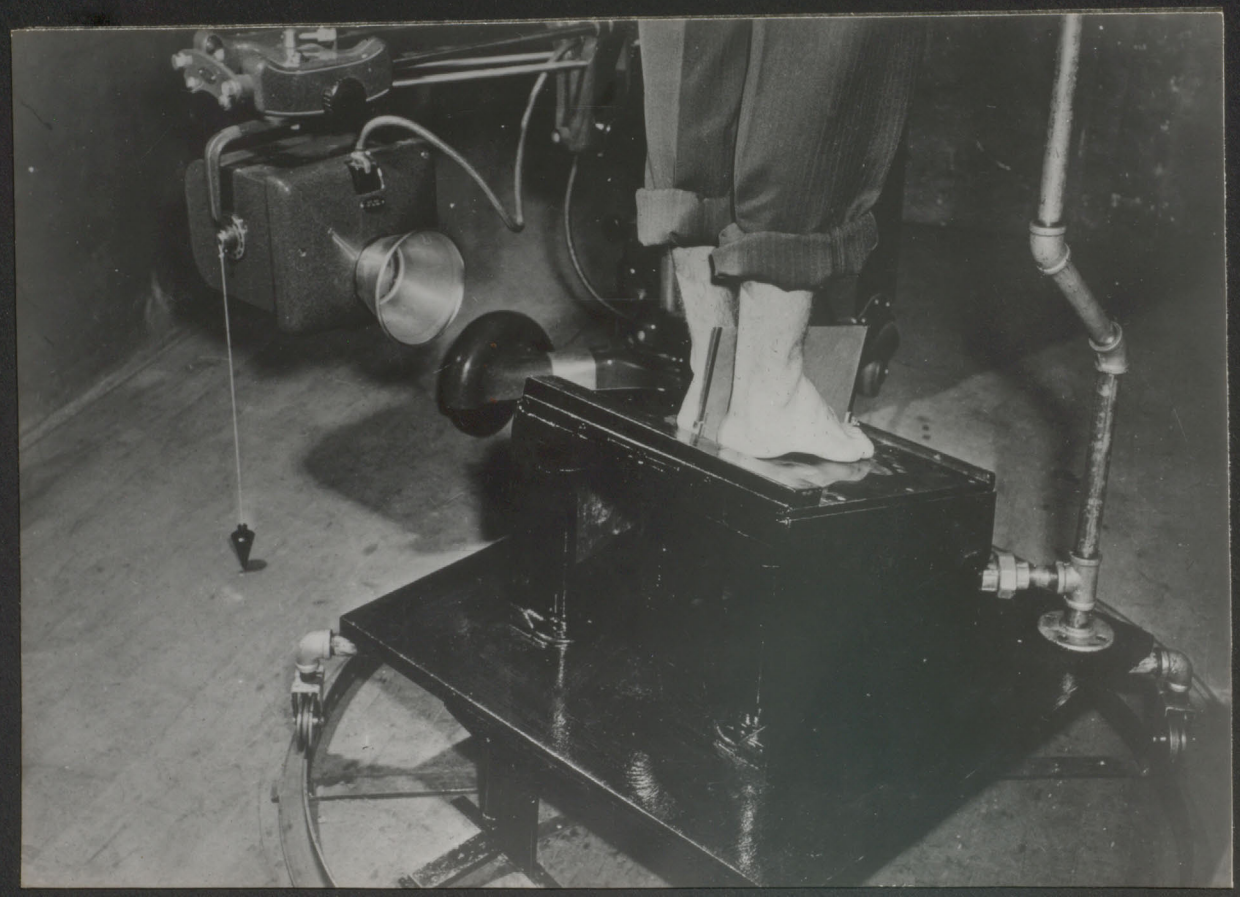
ELECTRO-CARDIOGRAPHY - DR. H.E. HOFF USING SANBORNE CARDIETTE AND CARDIOSCOPE, WHICH MAKE WRITTEN AND VISUAL RECORDS OF THE ELECTRICAL IMPULSES OF THE HEART BEAT.



A.M.D. 34. Postural Blood Pressure Reactions

Projects were carried out for the Committee in Laboratories and Hospitals across the whole of Canada.

Dr. Harold Rice, Winnipeg General Hospital. The specially designed boots and other apparatus permit measurement of patient's circulation when he is tipped into upright position.



FOOT SURVEY - APPARATUS FOR LATERAL X-RAY.

MANY THOUSANDS OF SOLDIERS WERE EXAMINED BY SPECIAL METHODS IN ORDER TO FIND WAYS OF PREVENTING FOOT AILMENTS. THIS PROJECT WAS DIRECTED BY COL. R.I. HARRIS AND MAJ. T. BOOTH.

Army Med. No.5

ACUTE RESPIRATORY DISEASE

Acute respiratory disease cost Canada the time of one division annually and a financial loss of six million dollars each year.

In an effort to reduce this loss of time and money studies were commenced by the Research and Development Division of D.G.M.S. late in 1942. Previous work on influenza was continued in co-operation with Dr. Ronald Hare, Connaught Laboratories, and field observations on atypical pneumonia, influenza, and streptococcal epidemics were conducted from January, 1943, at Camp Borden, Ontario.

It was found that efficient dust control in barracks would greatly reduce the rate of respiratory disease. Oiled sawdust sweeping, outdoor shaking, airing, and proper folding of blankets were instituted.

An educational campaign, using film strips with accompanying lectures, was instituted in September, 1943, and has continued with good results. In areas where the measures recommended have been carried out a reduction of airborne disease by half to two thirds has been effected. The press and radio have advanced this campaign by many articles on the subject.

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DUSTLESS SWEEPING BY HUT ORDERLIES ONLY IS RECOMMENDED.

NEW METHOD OF FOLDING BLANKETS PERMITS A MAXIMUM EXPOSURE TO LIGHT AND AIR.

CANADIAN ARMY PHOTO *(Crown Copyright)* PLEASE CREDIT

AIRING BLANKETS IN BRIGHT SUNLIGHT.

CANADIAN ARMY PHOTO *(Crown Copyright)* PLEASE CREDIT

OLD METHOD OF FOLDING BLANKETS DID NOT ALLOW CIRCULATION OF AIR.

CANADIAN ARMY PHOTO *(Crown Copyright)* PLEASE CREDIT

NEW METHOD OF FOLDING BLANKETS PERMITS A MAXIMUM EXPOSURE TO LIGHT AND AIR.

CANADIAN ARMY PHOTO (Crown Copyright) PLEASE CREDIT

BOOT SCRAPERS WERE INTRODUCED.

CANADIAN ARMY PHOTO (Crown Copyright) PLEASE CREDIT

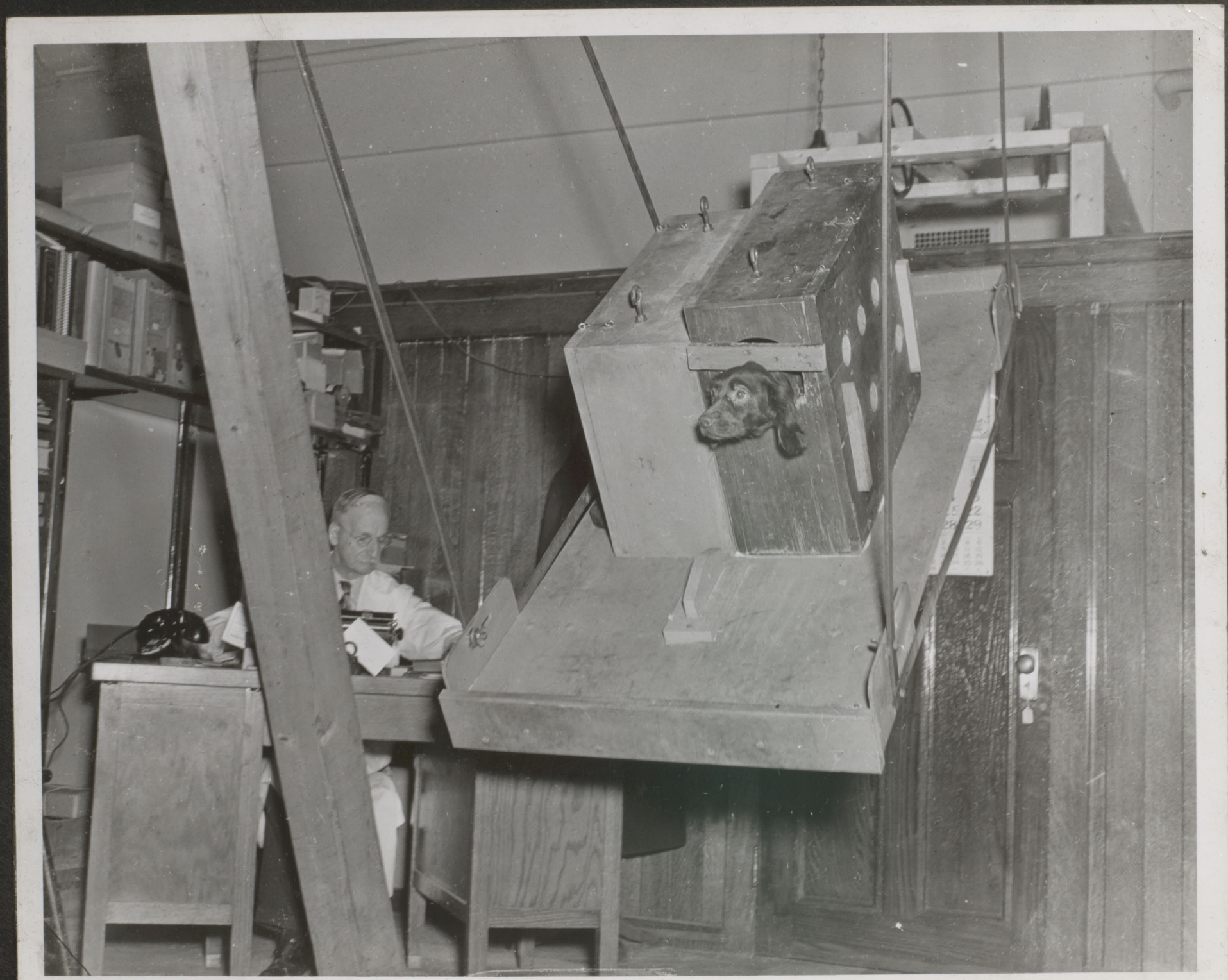
BACTERIOLOGICAL STUDIES WERE CARRIED OUT IN COOPERATION WITH THE DEPARTMENT OF PENSIONS AND NATIONAL HEALTH LABORATORY OF HYGIENE. MAJOR W.R. FEASBY, RESPIRATORY DISEASE CONTROL OFFICER, D.G.M.S., AND DR. E.T. BYNOE, LABORATORY OF HYGIENE.

Army Med. No.9

MOTION SICKNESS

Studies on drugs to prevent or ameliorate motion sickness are being carried out by Dr. R.L. Noble, Institute of Endocrinology, McGill University.

The problem is important for Army personnel since large numbers may be exposed to severe motion in landing barges or in transport aircraft. Promising new remedies have been developed.



SEASICKNESS SWING IN ACTION WITH DOG ABOARD.

19.

SEASICKNESS SWING AND EXPERIMENTAL DOGS - THE SWING WHICH IS USED TO SIMULATE THE MOVEMENT OF A SHIP IN SEASICKNESS STUDIES. THIS IS RUN BY AN ELECTRIC MOTOR, AND CAN SWING THROUGH AN ARC OF 90 DEGREES 14 TIMES A MINUTE. THE DOGS ARE USED FOR PRELIMINARY STUDIES OF SEASICKNESS REMEDIES. (DR. R.J. NOBLE, THE INVESTIGATOR, IS AT THE LEFT.)

SEASICKNESS SWING WITH SUBJECT

SEASICKNESS SWING WITH MAJ. J.A.F. STEPHENSON, R.C.A.M.C. ON SPECIAL SEAT READY FOR AN EXPERIMENTAL RUN. THE CUP IS READY IN CASE OF ACCIDENTS.

Army Med. No.9

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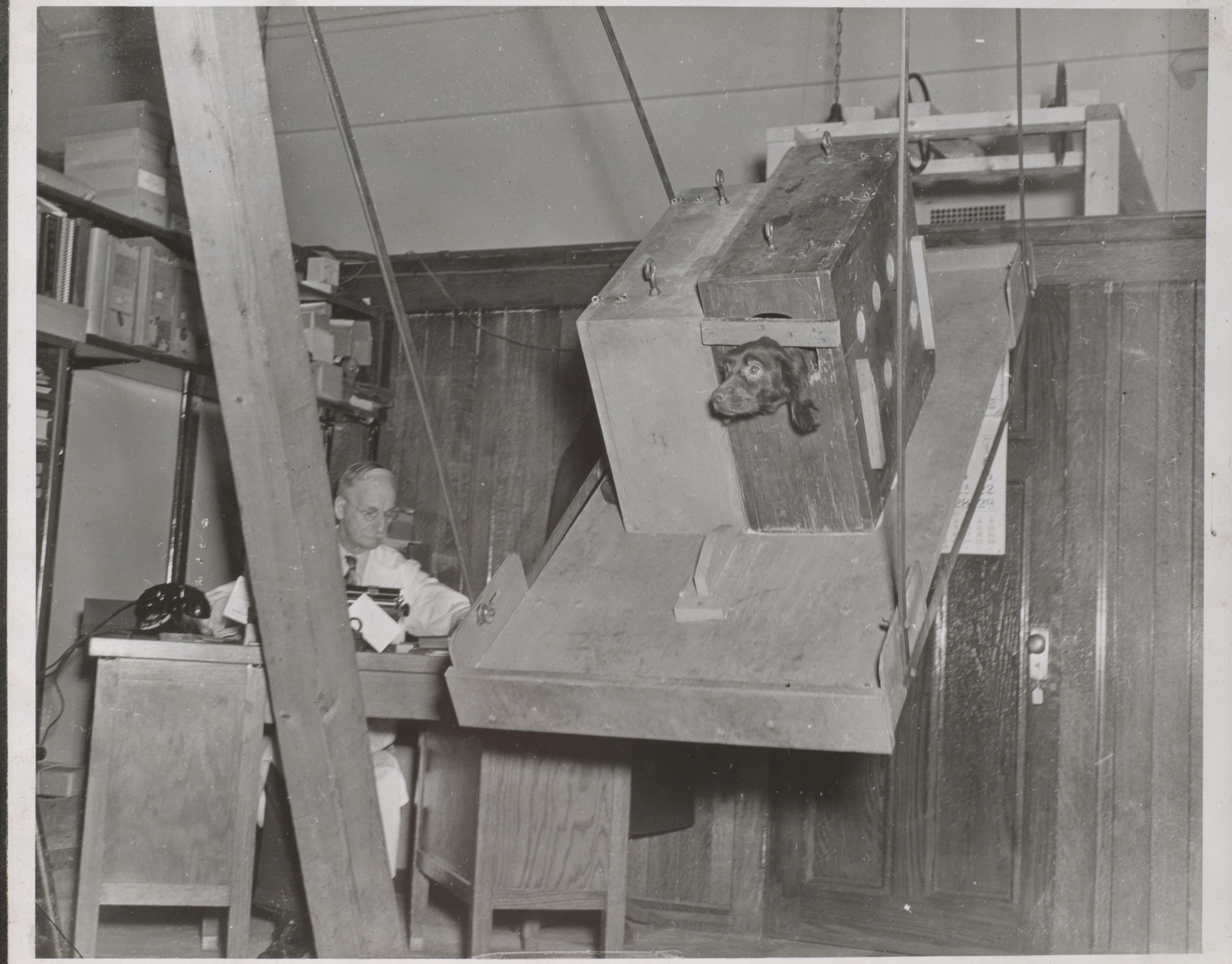
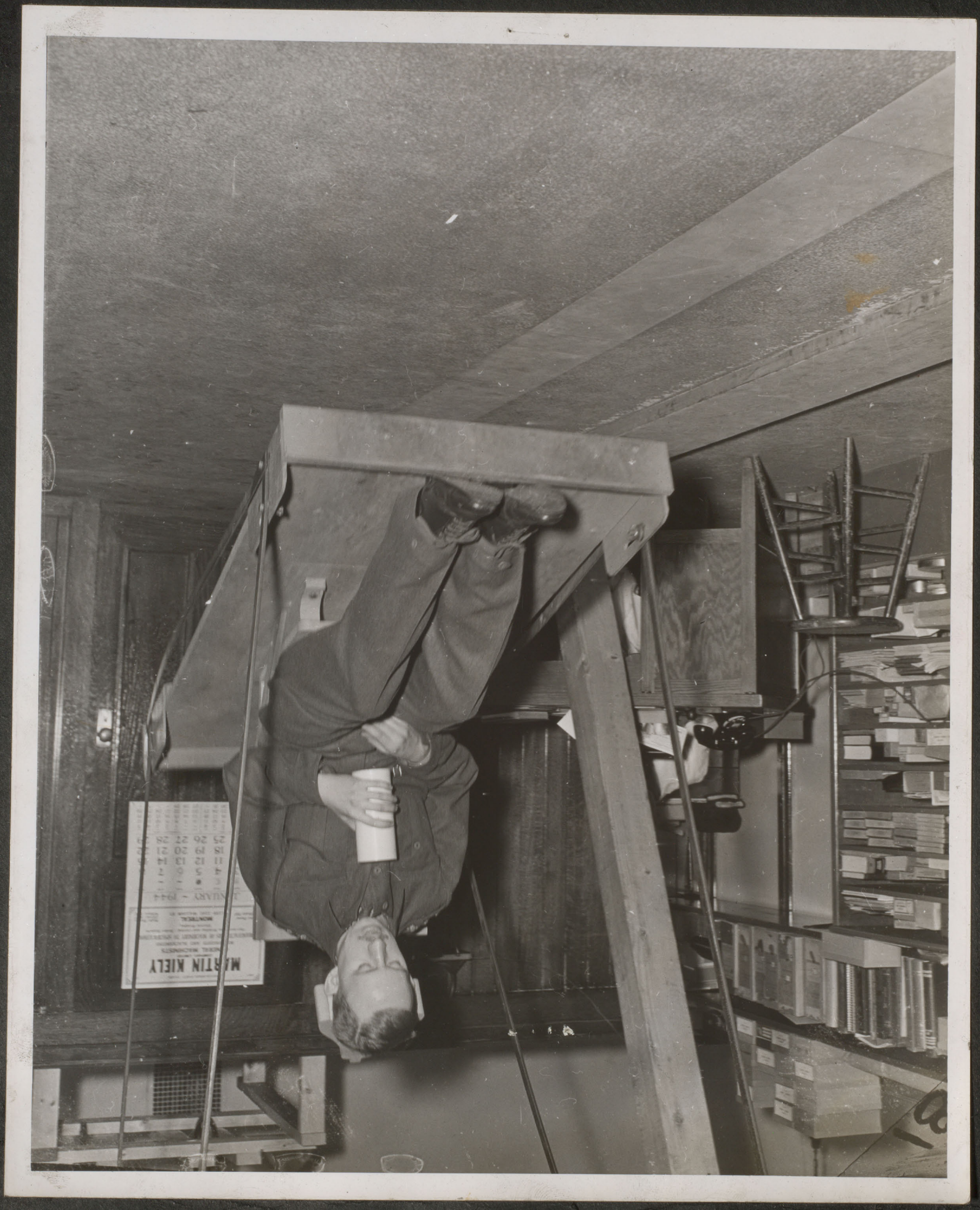


SEASICKNESS SWING IN ACTION WITH DOG ABOARD.

SEASICKNESS SWING WITH SUBJECT

SEASICKNESS SWING WITH MAJ. J.A.F. STEPHENSON, R.C.A.M.C. ON SPECIAL SEAT READY FOR AN EXPERIMENTAL RUN. THE CUP IS READY IN CASE OF ACCIDENTS.

Soldier undergoing a trial on seasickness swing.

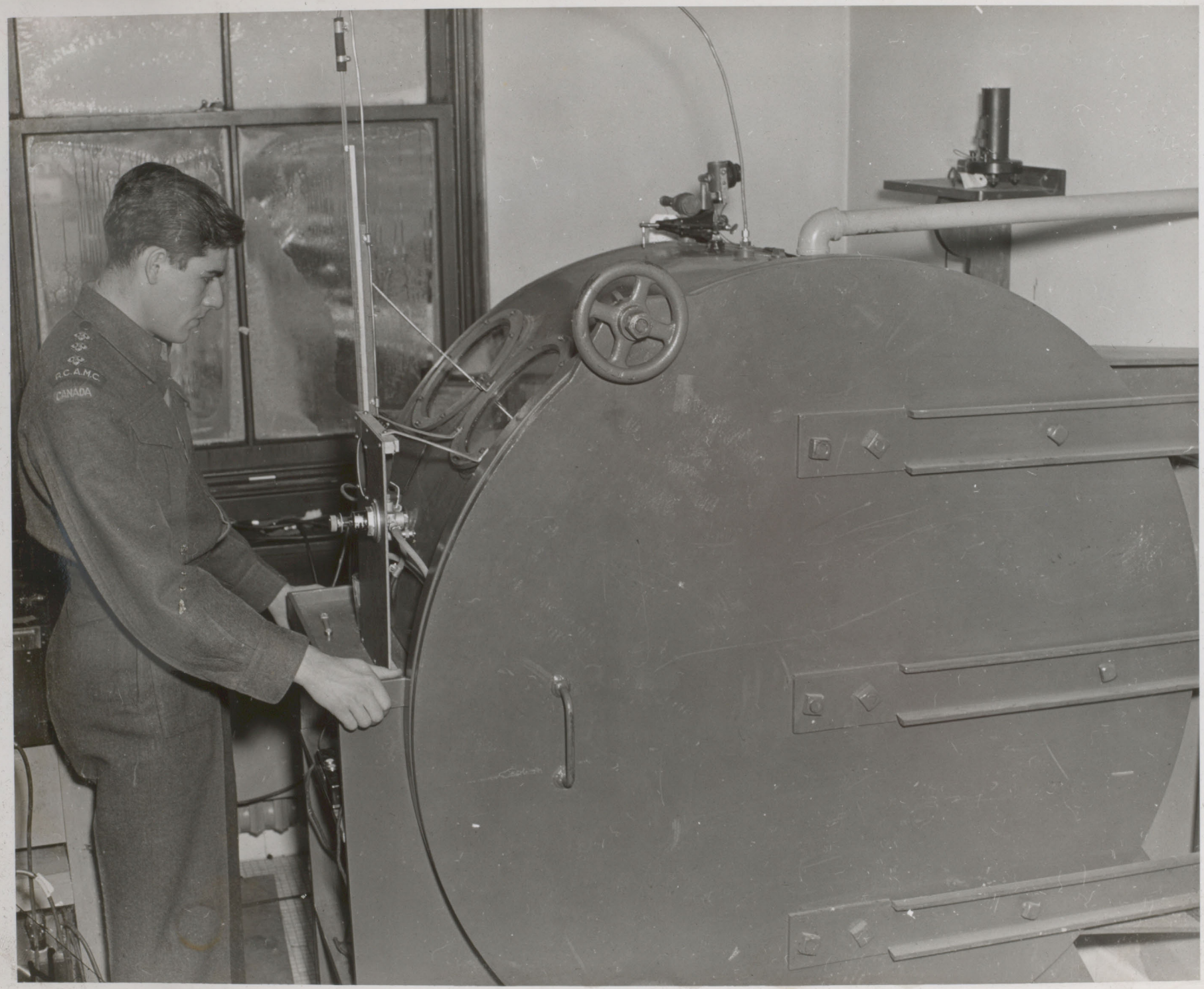


Army Med. No.8

EVACUATION OF WOUNDED BY AIR

The carriage of casualties by aircraft is increasing daily in scope. It was envisaged by D.G.M.S. officers that at some time in the future when aircraft are available casualties may be returned via the North Atlantic route. This might require flying at fairly high altitudes, 10 to 20 thousand feet, and a series of medical problems might develop, dependent on the low barometric pressure at such heights.

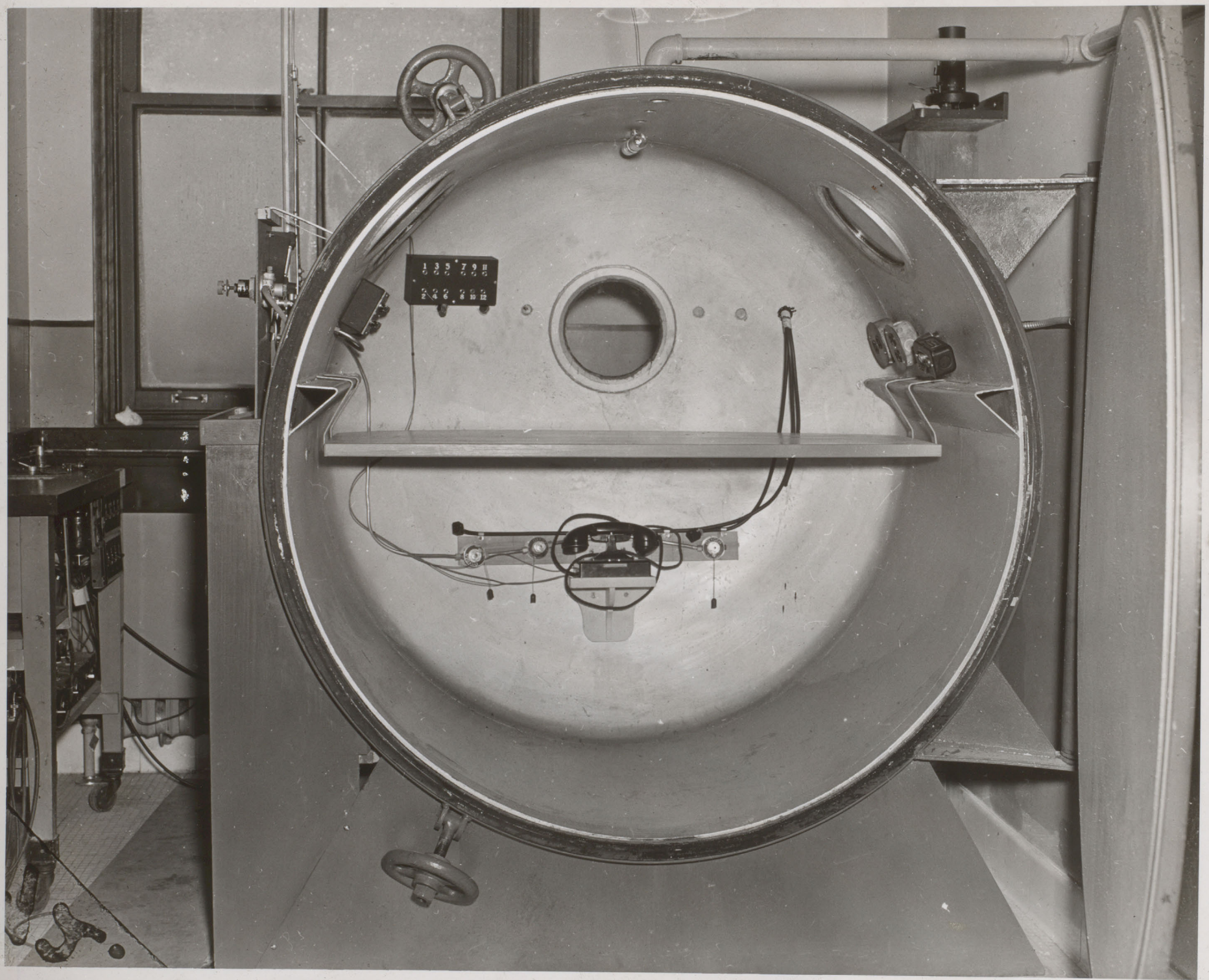
The R.C.A.M.C. officer working at the Montreal Neurological Institute has studied a variety of these problems in the small decompression chamber shown in the following pictures. The chamber was designed by Capt. A.J. Cipriani, A.M.D.10, D.G.M.S.



View of the chamber with the door closed. Experimenter is shown controlling the chamber leak valve. Mercury manometer and oxygen flow apparatus are seen attached to the side of the chamber, just below the observation windows. In the corner of the room on a shelf is seen the galvanometer which forms part of the Milikan oximeter unit.


1 3 5
7 9 11
2 4 6 8

THIS SHOWS A SUBJECT, MR. MURRAY BORNSTEIN, ON THE LEFT AND AN EXPERIMENTER, CAPT. E. PETERSON, ON THE RIGHT, SEATED IN THE CHAMBER AS THEY WOULD BE DURING A DECOMPRESSION EXPERIMENT. THEY ARE SEATED ON THE REMOVABLE WOODEN SEATS. BOTH ARE WEARING B.L.B. OXYGEN MASKS. ONE OF THE ELECTRICAL BOXES IS SEEN AT THE BACK OF THE SUBJECT'S HEAD, THUS ILLUSTRATING ITS CONVENIENT LOCATION FOR TAKING ELECTROENCEPHALOGRAMS AT ALTITUDE.


1 3 5 7 9 11
2 4 6 8 10 12

ANIMAL SHELF INSERTED

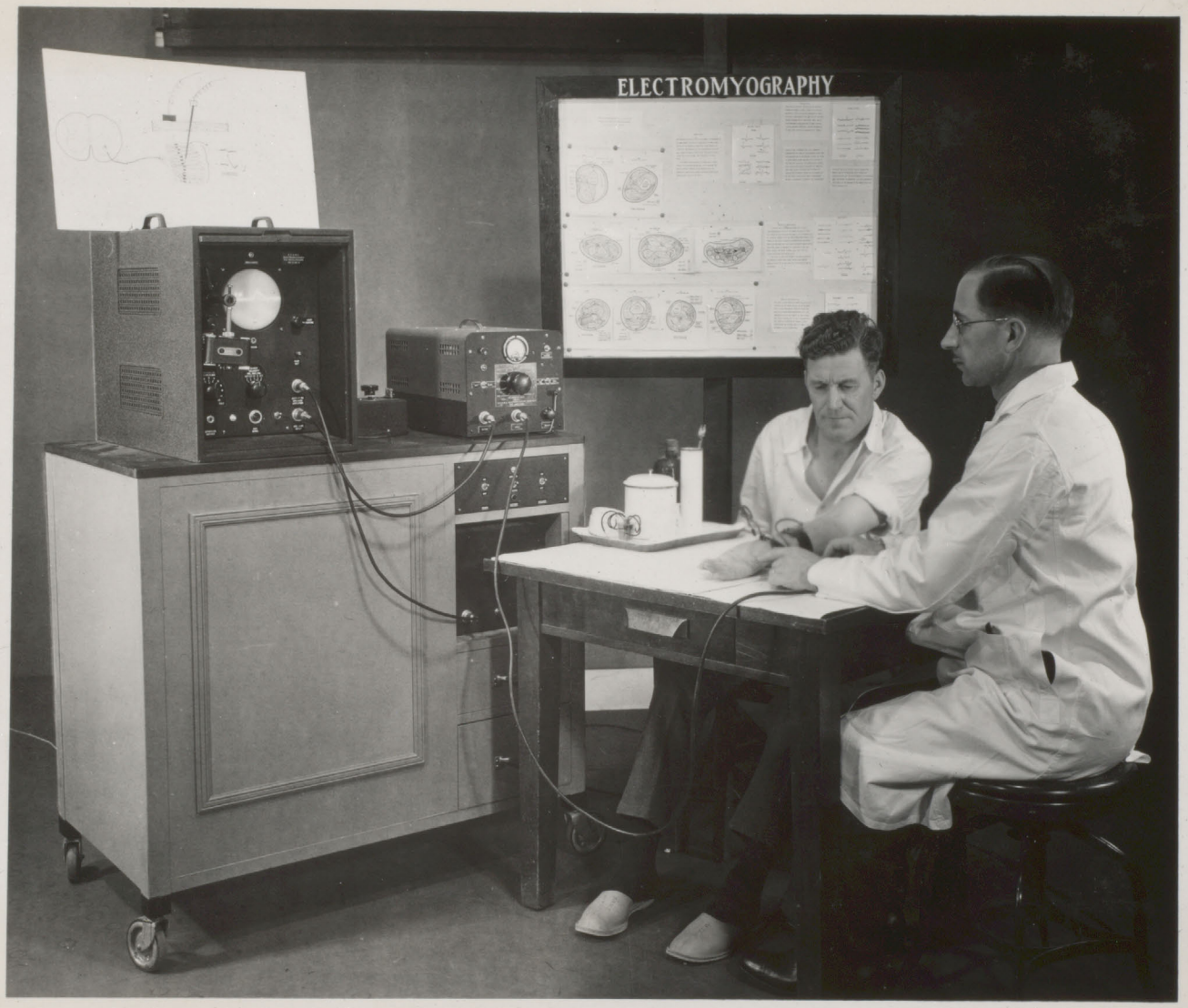
This shows the interior of the chamber with a large shelf in position for use in animal experiments. On the left are 2 connector boxes for use in electrical recording with ink writing oscillographs. Below the shelf the oxygen outlets intercommunicating telephone and oximeter sockets are located.

At the top of the chamber are 2 lamps for interior lighting. The pipe which is seen leading away from the top of the chamber is connected with the vacuum pump and is used for withdrawing the air from the chamber during decompression.

On the right are seen 2 electrical plug units for supplying current to electrically driven apparatus where the need arises. Beside them is a safety electrical switch which is capable of stopping the pump motor during decompression.

CONTROLS

This view shows some of the control apparatus in use with the chamber. At the upper left hand corner the suction pipe is seen leaving the chamber. The mercury manometer is shown rising near the centre of the picture from the glass reservoir on the shelf. To the left of the manometer is one of the electrical connector boxes corresponding to similar boxes on the inside of the chamber. The manner of attaching connecting wires can be seen. To the right of the manometer, the oxygen flow regulator is situated. It consists of a flow control valve to the right and a vein type flow-meter situated to the left of the valve in the circular cut-out of the oxygen control panel.

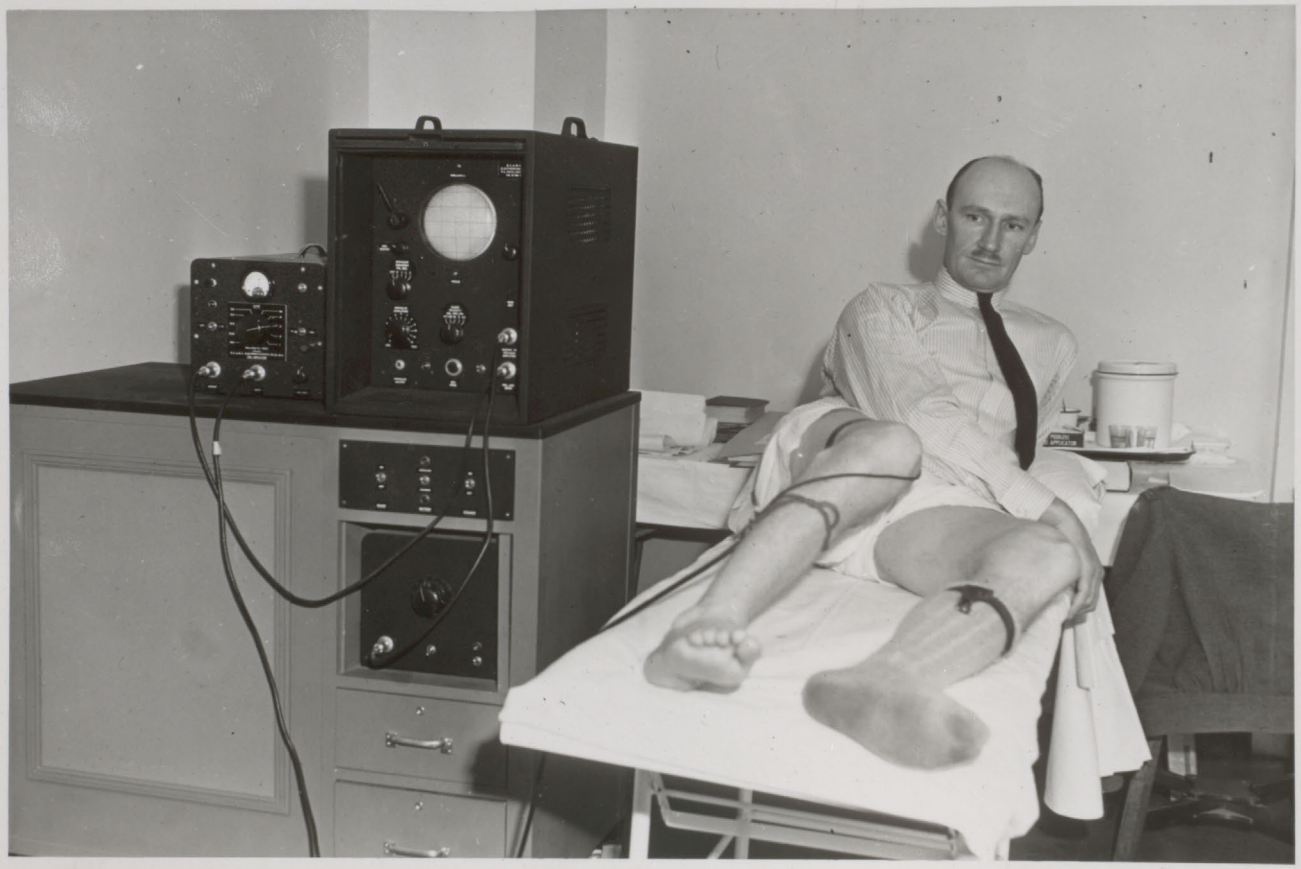


R.C.A.M.C. ELECTROMYOGRAPH. DR. H.H. JASPER, MONTREAL NEUROLOGICAL INSTITUTE, IS USING THE APPARATUS TO TEST NERVE FUNCTION IN A WOUNDED VETERAN.

DR. H.H. JASPER AND MISS MARJORIE MATTHEWS RECORDING ELECTRICAL CURRENT FROM VETERAN'S WOUNDED ARM.

ELECTROMYOGRAPHY IN PERIPHERAL NERVE INJURIES

THE APPARATUS PICTURED ABOVE WAS DEVELOPED FOR THE ARMY COMMITTEE BY DR. JASPER AND CAPT. W.O. FORDE AT THE MONTREAL NEUROLOGICAL INSTITUTE. A COMPLETE APPARATUS WAS PROVIDED FOR EACH NERVE INJURY CENTER ACROSS CANADA.



OFFICER WITH LEG WOUND AND RESULTING NERVE INJURY.

WINTER EQUIPMENT AND RATION TRIALS

PRINCE ALBERT

1943-44

THE RESEARCH DIVISION HELPED TO PLAN AND LENT MANY OFFICERS FOR THESE IMPORTANT TRIALS. MANY IMPROVEMENTS IN EQUIPMENT, CLOTHING AND RATIONS RESULTED.

TESTING CAMOUFLAGE VALUES.

COLD WEATHER CLOTHING TRIALS - BETWEEN THE BIRCHES.

TEST TROOPS AT WINTER RATION TRIALS. PRINCE ALBERT.

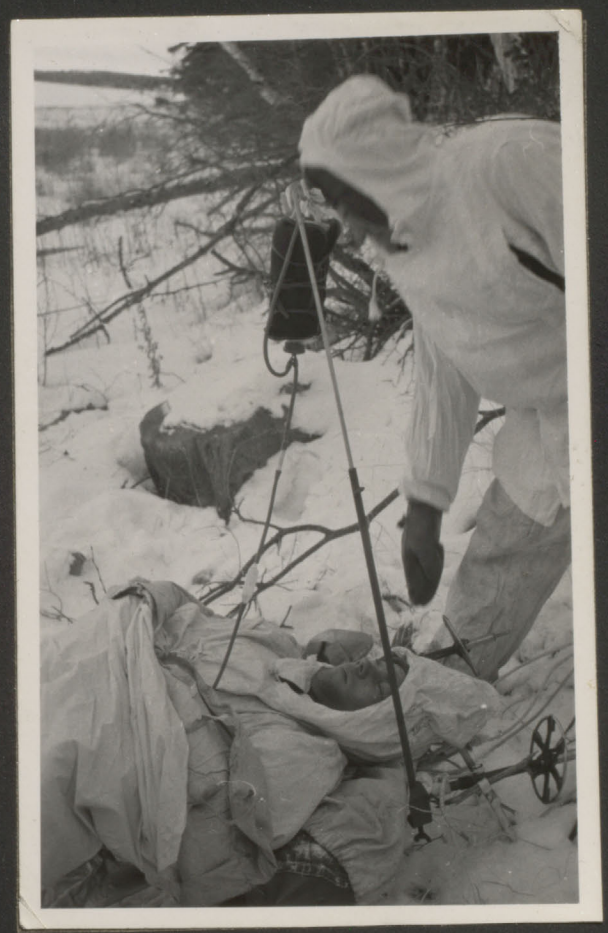
EXAMINATION OF TEST TROOPS, PRINCE ALBERT RATION TRIAL. LEFT, CAPT. J. LEWIS, R.C.A.M.C. BACKGROUND, CAPT. IAN MACKAY, R.C.A.M.C.

MEMBER OF TEST PLATOON PRIOR TO FORCED MARCH

RATION TRIAL OBSERVERS

CALCULATING CALORIC VALUE OF FOOD TAKEN BY TROOPS

PRINCE ALBERT RATION TRIALS - DR. ROBERT JOHNSON,
HARVARD UNIVERSITY, IN MOBILE NUTRITION LABORATORY.



TESTS OF BLOOD TRANSFUSION UNDER COLD WEATHER CONDITIONS AT PRINCE ALBERT.
NOTE THE VALUE OF CAMOUFLAGE.

COLD WEATHER TRIALS, PRINCE ALBERT. EXHAUSTION FROM CALORIC DEFICIENCY.

Army Med. No.10

ENTOMOLOGY

Plague Survey - Western Canada

A possible hazard to the health of troops has existed in western Canada where a migration of rats is advancing westward towards Alberta in the prairie provinces.

The ground squirrels in the west are known to be infected with the micro-organism which causes plague. It is unknown, however, what the effect will be when the rats reach this area.

A field survey of rodents for plague carrying organisms was therefore carried out in military installations in western Canada in the summer of 1943. This showed that there was little hazard from plague, but that tularaemia should be watched. The survey was carried out under the direction of Major R.H. Ozburn, A.M.D.10, D.G.M.S.

MOBILE LABORATORY IN THE FIELD.

DISSECTING RODENTS IN THE FIELD.

AUTOPSY EXAMINATION OF RODENT


CSW

Insect Repellent Tests

Several field trials of mosquito-repellent creams and lotions were made. These resulted in a more potent and longer-acting preparation for army issue.

MOSQUITO SURVEY

IT WAS FEARED THAT SOLDIERS RETURNING MALARIOUS FROM THE MEDITERRANEAN MIGHT BE A SOURCE OF INFECTION TO THE CIVILIAN POPULATION. A LARGE SCALE SURVEY WAS THEREFORE CARRIED OUT TO DETERMINE THE PRESENCE OF ANOPHELINE MOSQUITOS (THEY CARRY MALARIA) THROUGHOUT CANADA.

INSECTS WERE TRAPPED AND BREEDING GROUNDS WERE SURVEYED AT 35 SERVICE INSTALLATIONS AND PRISONER OF WAR CAMPS THROUGHOUT CANADA DURING TWO SUMMER SEASONS.

MOSQUITO SURVEY - STAGNANT WATER NEAR CHORLEY PARK MILITARY HOSPITAL, TORONTO - AN IDEAL BREEDING GROUND FOR MOSQUITOES.

MOSQUITO SURVEY - REFUSE DUMP WITH RUNNING WATER NEAR CHORLEY PARK MILITARY HOSPITAL.

MOSQUITO SURVEY - MOSQUITO TRAP IN POSITION.

Army Med. No.18

STUDIES ON BLOOD COAGULATION

Capt. D.W. Ruddick, R.C.A.M.C., working with Dr. T.C. Waugh, Department of Pathology, McGill University, has developed a new test which measures any increased tendency of the blood to clot.

This opens a gateway to determining how extensive blood clots develop in some patients after operation or other illnesses, sometimes leading to disability or death.

TEST IN OPERATION

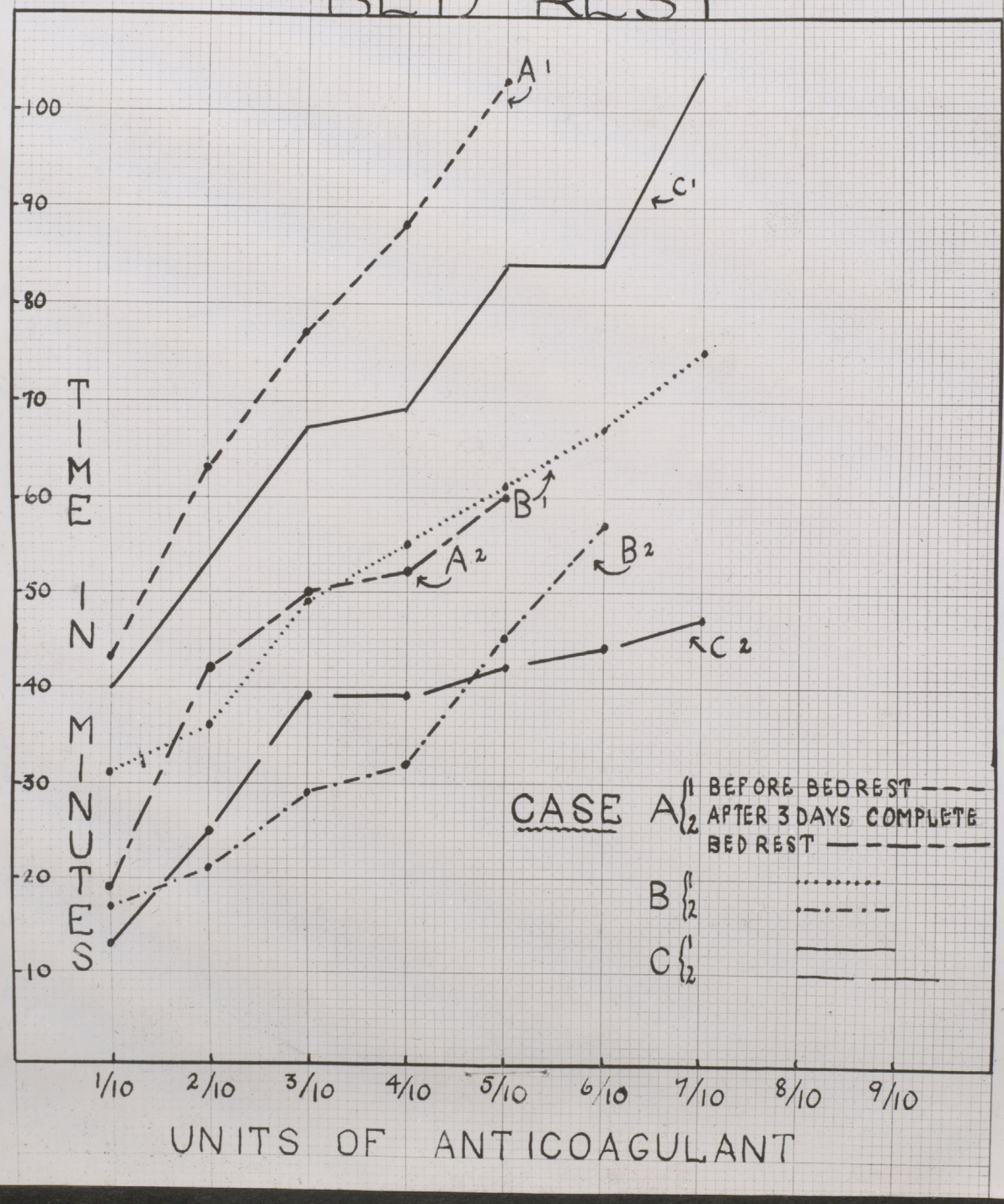
By rotation of test-tube rack under controlled conditions tubes 1-10 should congeal in consecutive order - time interval for each tube being plotted against units of biological anticoagulant.

SERIAL COAGULATION

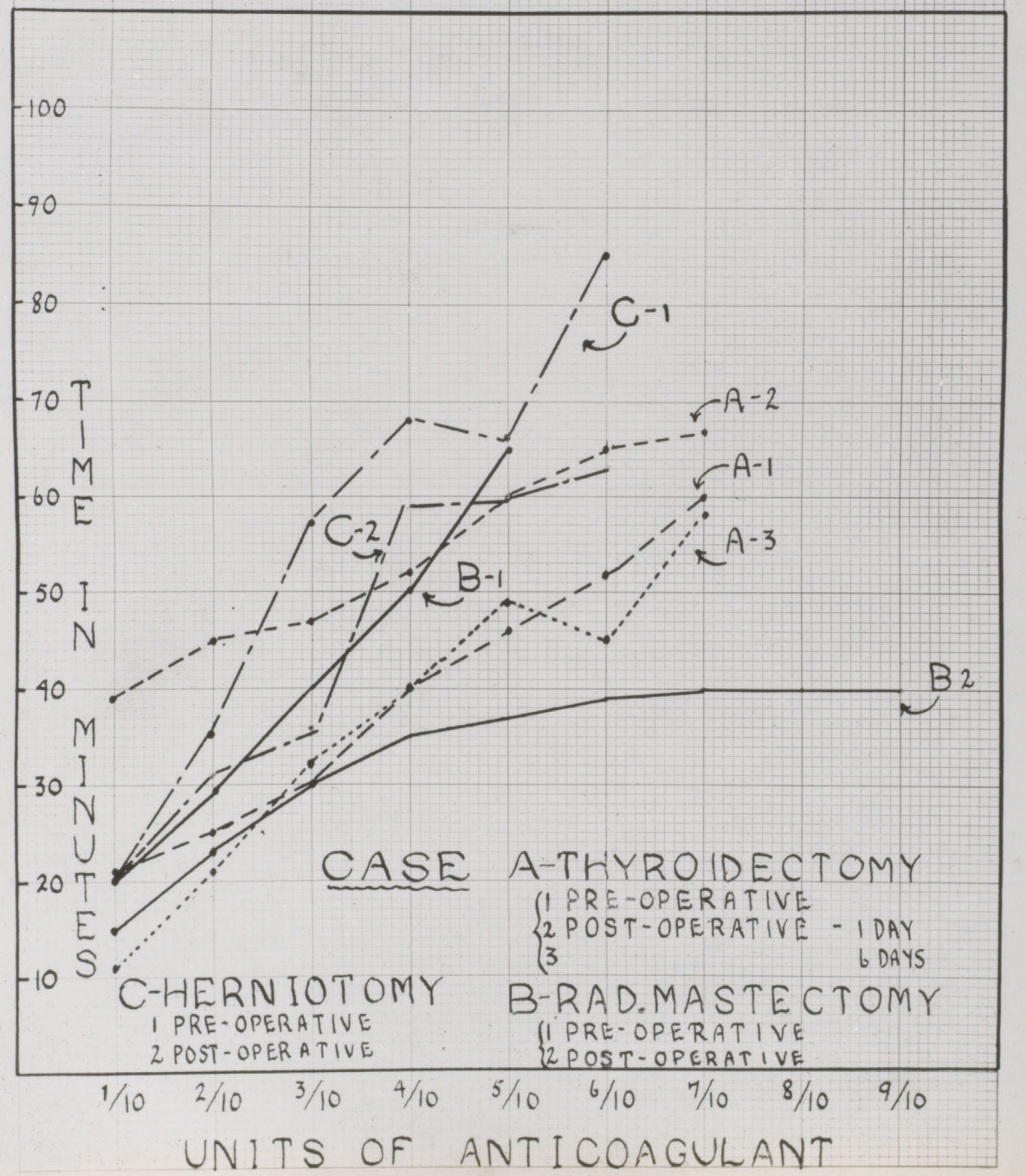
BED REST

THIS CHART DEMONSTRATES AN INCREASED TENDENCY OF COAGULATION PRODUCED BY BED REST (WHICH HAS NOT BEEN DEMONSTRATED BY ANY RECOGNIZED TEST TO DATE). USING STANDARDIZED BIOLOGICAL ANTI-COAGULANTS IN DILUTIONS AS SHOWN, A STANDARD GRAPH FOR THE PATIENT IS ESTABLISHED. SUBSEQUENT TESTS DEMONSTRATE EITHER AN INCREASED OR DECREASED TENDENCY OF COAGULATION. IT WOULD APPEAR THAT THIS HAS A PRACTICAL APPLICATION TO THE DIAGNOSIS OF THROMBOPHLEBITIS, THROMBOSIS, AND PULMONARY EMBOLISM. WITH SUCH EVIDENCE IT MAY BE POSSIBLE TO PREVENT THROMBOSIS AND PULMONARY EMBOLISM, THEREBY ASSURING A SHORTER CONVALESCENCE.

SERIAL COAGULOGRAM
SHOWING EFFECTS OF BED REST



SERIAL COAGULOGRAM
SHOWING OF EFFECTS OF OPERATION



SERIAL COAGULATION

OPERATION

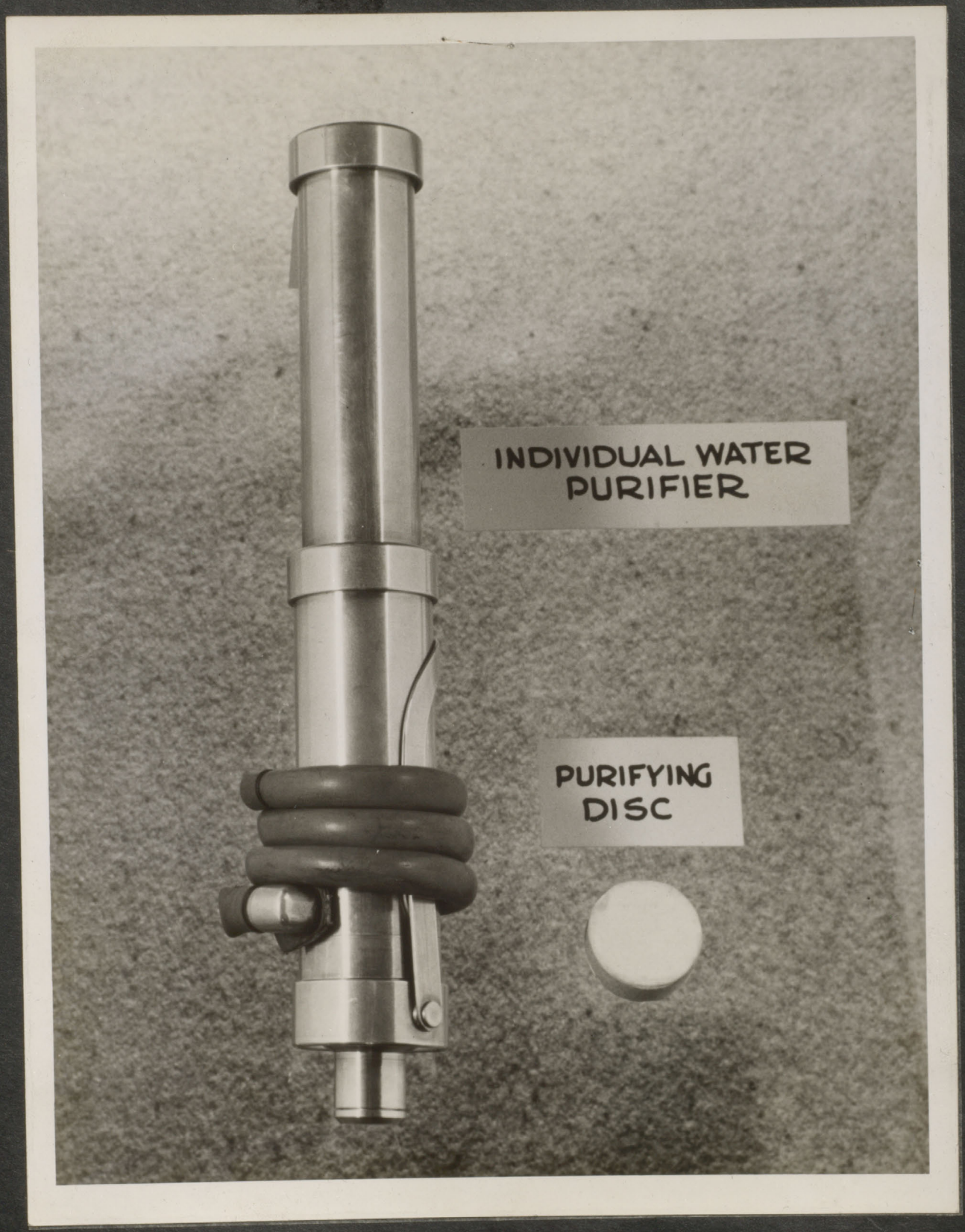
THIS CHART DEMONSTRATES INCREASED TENDENCY OF COAGULATION FOLLOWING OPERATIVE PROCEDURE. THYROIDECTOMY ILLUSTRATES A SLIGHT TENDENCY TO HAEMORRHAGE ONE DAY POST-OPERATIVELY, WITH A RETURN TO NORMAL SIX DAYS POST-OPERATIVELY.

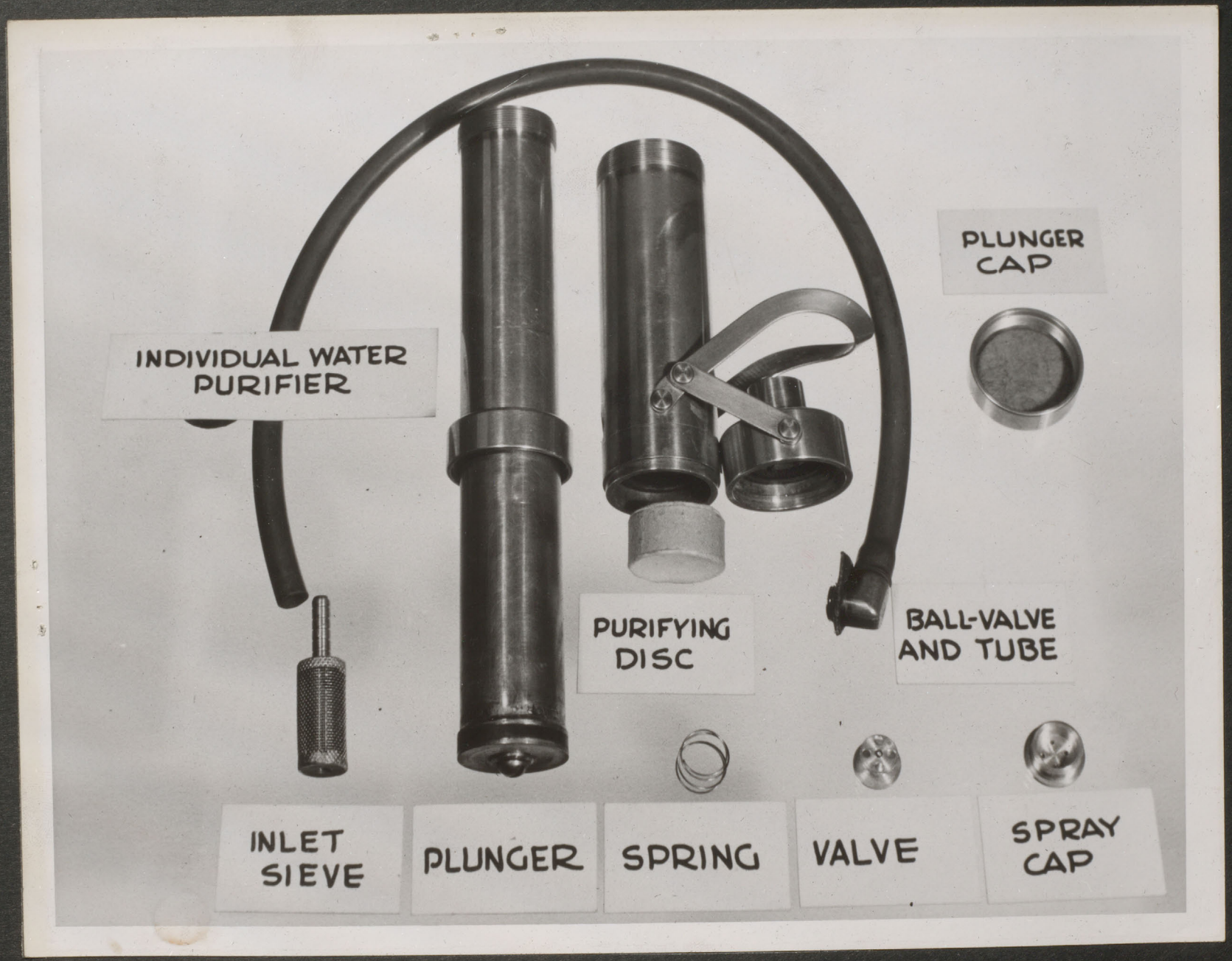
Army Med. No.11

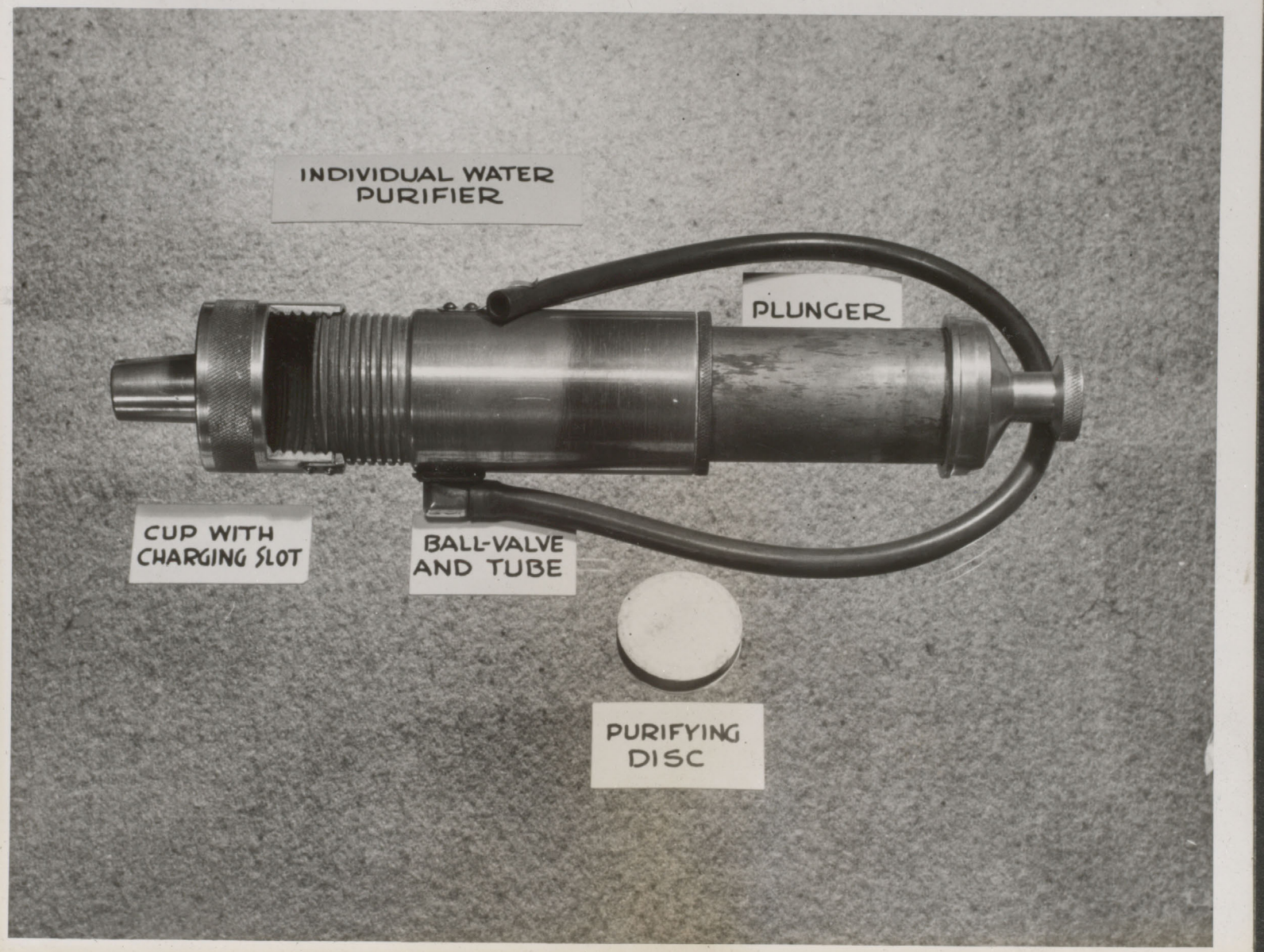
INDIVIDUAL WATER PURIFIER

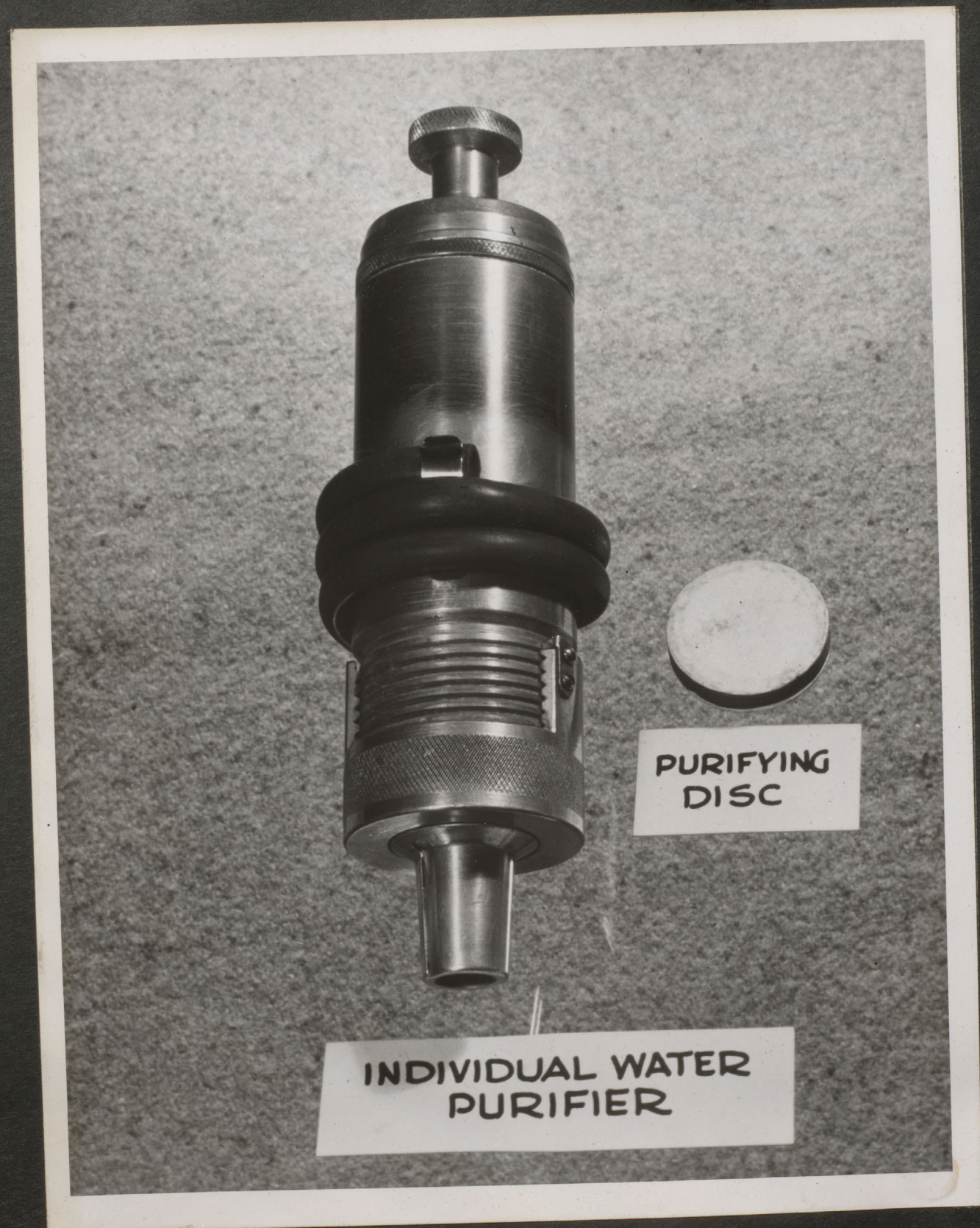
This device was designed by Major A.F.W. Peart, A.M.D.10, D.G.M.S., for the use of individual soldiers or small groups of men in the field.

It combines fine filters with water purification materials which permit dirty water to be purified and pumped directly into the water bottle.

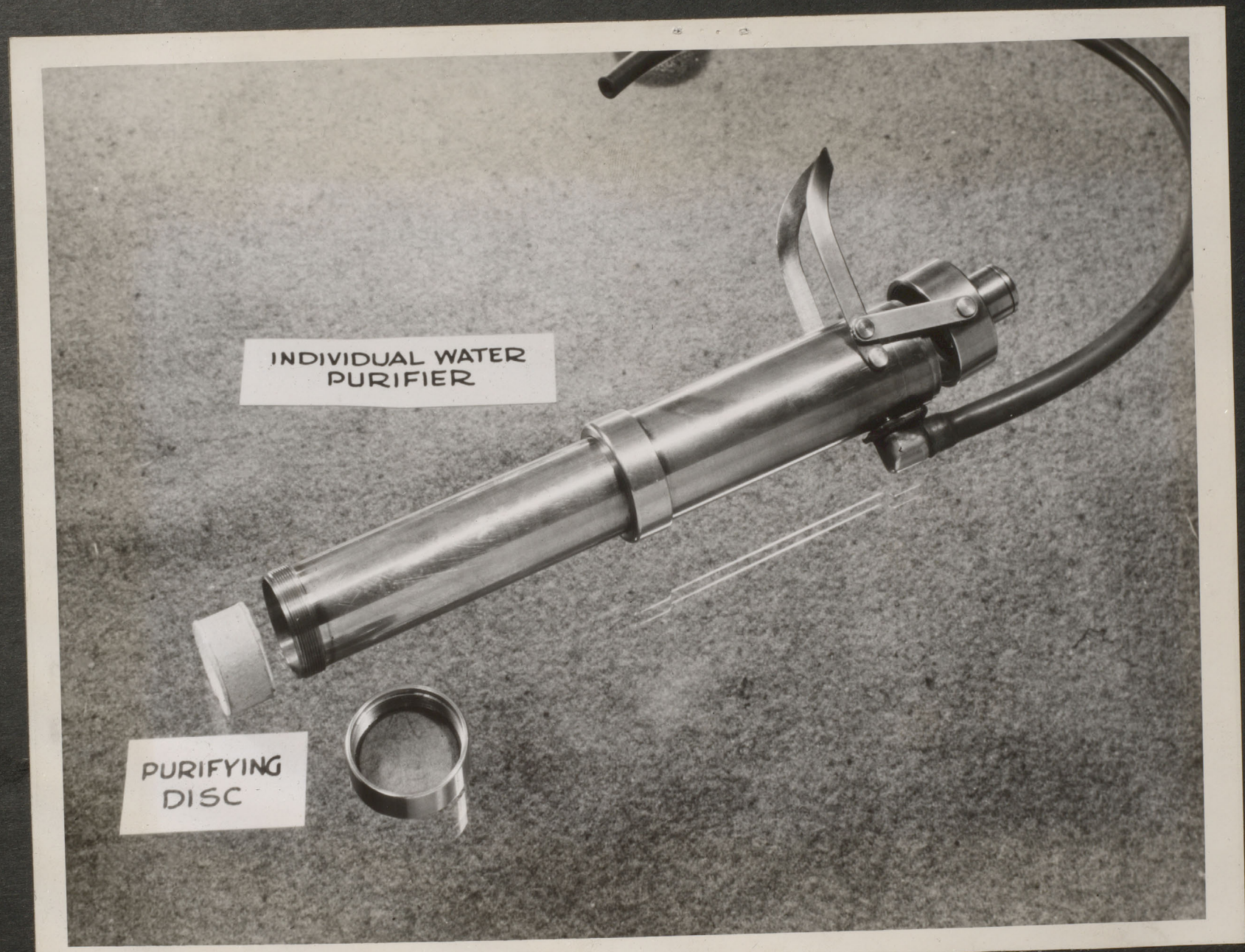

INDIVIDUAL WATER PURIFIER
PURIFYING DISC


INDIVIDUAL WATER PURIFIER
PLUNGER CAP
PURIFYING DISC
BALL-VALVE AND TUBE
INLET SIEVE
PLUNGER
SPRING
VALVE
SPRAY CAP


INDIVIDUAL WATER PURIFIER
PLUNGER
CUP WITH CHARGING SLOT
BALL-VALVE AND TUBE
PURIFYING DISC


PURIFYING
DISC
INDIVIDUAL WATER
PURIFIER

INDIVIDUAL WATER PURIFIER.


INDIVIDUAL WATER
PURIFIER
PURIFYING
DISC

AURAL REHABILITATION

DEAFNESS DUE TO BLAST OR CONTINUED LOUD NOISE IS A THREAT TO SOLDIERS. WITH ASSISTANCE FROM THE ARMY COMMITTEE A SPECIAL R.C.A.M.C. AUDIOMETER WAS DEVELOPED BY DR. HECTOR MORTIMER AND THE NORTHERN ELECTRIC COMPANY.

A SPECIAL SOUND-PROOFED ROOM (SEE ABOVE) WAS ALSO BUILT AT THE MONTREAL MILITRAY HOSPITAL FOR THE CARRYING OUT OF HEARING TESTS.

R.C.A.M.C. AUDIOMETER IN USE AT MONTREAL MILITARY HOSPITAL.