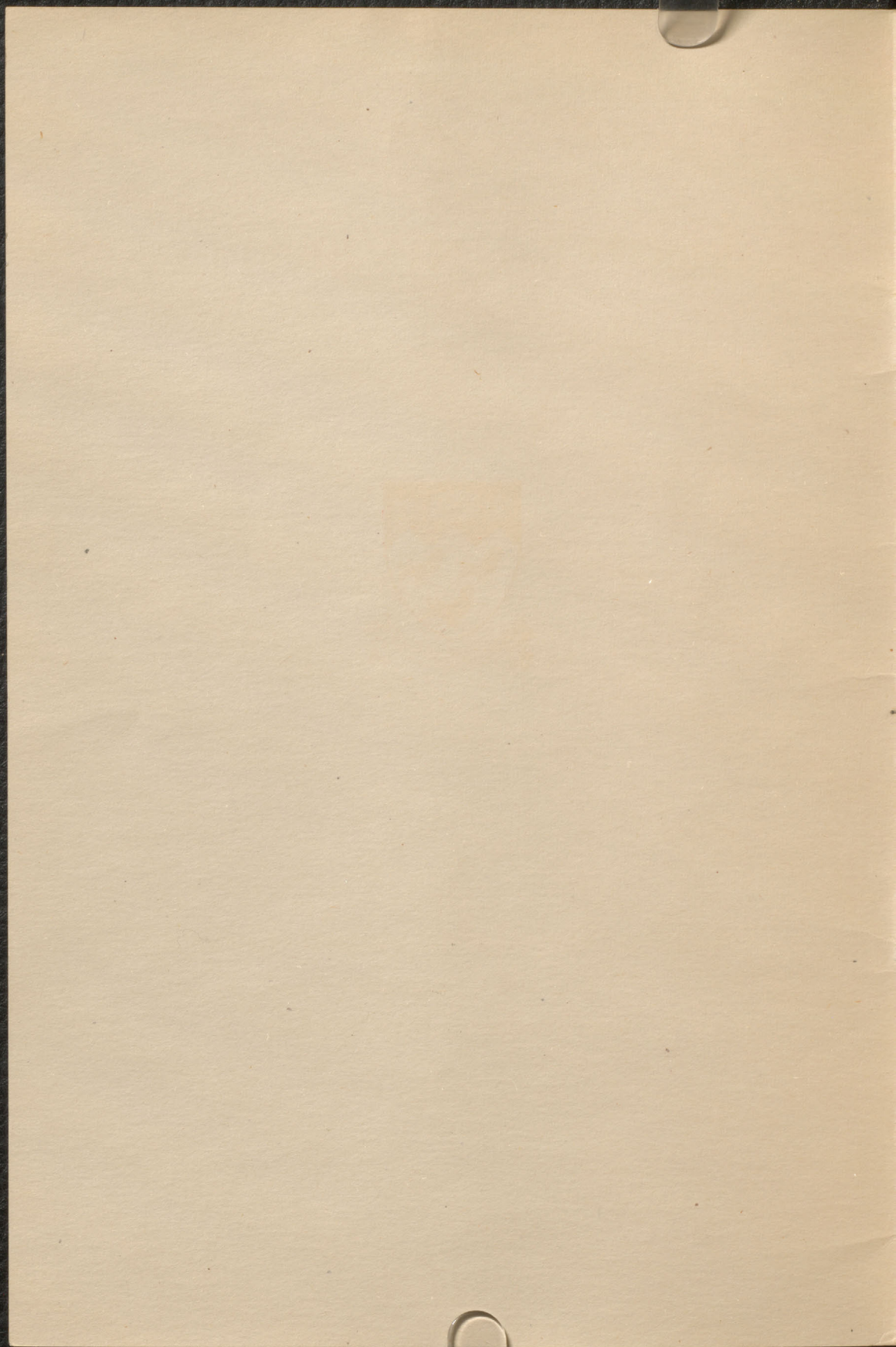


MCGILL UNIVERSITY



Addresses Delivered at the Victory Convocation
and Ceremonies
Commemorating Founder's Day

1945



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McGILL UNIVERSITY

Address: Montreal, Quebec, Canada

and

Department of Chemistry

FOUNDER'S DAY DINNER

THE HONOURABLE D. C. ABBOTT

Minister of National Defence.

I regard it as a great honour to have been asked to propose the toast to Canada's Armed Forces at this gathering of my fellow graduates of Old McGill. McGill as an institution played a great part in Canada's war effort, and through her sons and daughters she has made a great contribution to our fighting services. Today the prestige of those fighting services is higher than it has ever been in the history of our country.

In the war now past the Royal Canadian Navy assumed responsibilities far beyond what any of us believed to be possible in 1939. No words of mine are adequate to describe the courage and the endurance of those thousands of young Canadians who became fighting seamen in our time of peril. They built a force and developed a tradition which will live long in the history of sea warfare.

Our Army, living up to the glorious traditions of the last war, has won for itself fresh honours wherever it has fought. How proud we all were during that perilous year through which the British Empire stood alone against the forces of our enemies—how proud we were that Canadian troops should have been the first line of defence in that island fortress, the courage and endurance of whose people saved the civilized world. Dieppe and Hong Kong are names which will live forever in the history of Canadian Arms. Sicily, Italy, France, Belgium and Holland have all acclaimed Canadian troops amongst their liberators. The record is one in which every Canadian may well take pride.

Of the achievements of the Royal Canadian Air Force we can be equally proud. Franklin Roosevelt called Canada "the aerodrome of democracy" because of our part in the Air Training Plan. But we did more than train airmen here. The vast majority of those who graduated under that plan were Canadians, and they fought in the skies, in every theatre of war, in their own squadrons and in others, with valour and with outstanding success.

At the signing of the Declaration of Independence Benjamin Franklin is reputed to have said "We must all hang together or, assuredly, we shall hang separately." I do not know whether at some early stage in the war that statement was accepted as the motto of the Chiefs of Staff Committee,

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but the co-operation which the three fighting services developed seems to suggest that it could have been. Today we all know that no one fighting service can fight a war alone and win. Indeed, no two can do it without the third.

The distinguished officers who honour the Graduates' Society of McGill University tonight by their presence as guests are representatives of each of our fighting services. They are General Crerar, Air Chief Marshal Breadner and Vice-Admiral Jones. As we welcome them, we all might well remember that occasions like this are possible once more in this country because of the victory which they and the men under their command helped to bring us.

It is appropriate, too, that McGill should honour these three men simultaneously. In doing so, McGill's sentiment is the sentiment of all Canadians because Canada has been well served by each of her three fighting services.

Ladies and gentlemen, it is my privilege to ask you to charge your glasses and to drink a toast to our fighting men—those who come back to us and those who gave their lives for us—to our men who fought and won.

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GENERAL H. D. G. CRERAR, C.B., D.S.O.

I reply to the toast so generously spoken to by The Hon. Douglas Abbott, as a Canadian soldier, representing the First Canadian Army, and not in my personal capacity. It is true that I was the Commander of that Army. But the credit of its achievements must go to every soldier who fought in it, and for it. The Canadian Army won its battles through the combined efforts of all of its officers and men—not by the special efforts of a particular individual. In those achievements the graduates of McGill played their full part. Neither you, nor I, would have expected otherwise. After all, your founder, James McGill, was the first Colonel of the Montreal Militia. The military tradition was, therefore, established in the University at its birth.

In the course of this World War, I am told that nearly 5,500 men and women who claim McGill as their University, served in the Active Armed Forces of Canada. In addition, over 600 McGill men resident in the United States, served in the Forces of our neighbor and ally to the south. Among the well-known McGill names are those of General A. G. L. McNaughton, who designed and built the magnificent First Canadian Army which I had the high privilege to command in its operations; Major General C. Vokes, who commanded the First Canadian Division in Italy, and Major General H. W. Foster, who commanded the 4th Canadian Armoured Division in N.W. Europe. These are a few well-known names—but there are many additional hundreds of McGill men who gained great distinction in the Canadian Army, and over four hundred received the public acknowledgment of an honour or an award.

I believe it true to say that the character of a man is much influenced by the character and the outlook of the educational institutions which he has attended. In the final stage of that preparation for adult life the influence of our universities must be of immense importance. From their graduates should emerge the leaders of Canadian political, economic, scientific and social thought.

We can never have too many Canadians with "leader" characteristics. Incidentally, a man has got to learn how to obey, and how to cooperate, before he can ever become an effective leader. Not otherwise will he clearly understand his problems, and his responsibilities, as such. It seems

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to me that the Graduates' Society of McGill University has a continuing and important contribution to make in all these things, not only to their University, but to Canada as a whole.

There are other speakers to follow, and it is time that I concluded my remarks. I do so in expressing to you my great personal pleasure at being one of your guests tonight, and on behalf of all ranks of the Canadian Army, my appreciation of the tributes to that Army which you have so generously paid.

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VICE-ADMIRAL G. C. JONES, C.B., R.C.N.

On behalf of the Officers and men of the Royal Canadian Navy, past and present, I have to thank you for the generous tribute you have paid them by your kind reception to me.

One of the really great events in the life of a responsible Service head is when some ingenious person coins anew or revives an old word which comes into general service usage. Undoubtedly, the outstanding one for the present war is that of "logistics." Very roughly, this might be defined as meaning the planning and execution necessary to provide the essential superiority of men and material at the decisive time and place. In the main, this is what has been behind our main effort in the Atlantic. On the whole the work was not spectacular, but was sheer clear drudgery to ensure the safe and timely arrival of convoys at their destination. Convoys, of course, varied in size, but if you would bear with me for a few moments I would like to give you a short outline of what the largest convoy crossing our North Atlantic waters consisted of. The convoy was known as HXS300 and sailed on the 17th of July, 1944, and the main body arrived in the Mersey on the 3rd of August. It consisted of 67 ships carrying a dead-weight tonnage of over a million tons of cargo of which one quarter was petroleum products. In formation, it covered an area of 30 square miles. The surface escort of the whole voyage was provided by the Royal Canadian Navy. All the ships reached their destination safely. This, in my judgment, is an example of what command of the sea means, and was perhaps a vital contribution to the success of Allied arms in Europe. I have, perhaps, used a spectacular example, but in their own way, the smaller ocean convoys and the various coastal ones all made their contribution to the final victory.

I would like to pay a tribute to the many McGill graduates and undergraduates who joined our Service; particularly, to those who as doctors, scientists and sailors have materially helped in making Canada's name honoured.

It has been stated that the aim of Naval education is to develop character and not brains. However much our critics agree as to the extent to which we have succeeded in the first, they are certainly unanimous about our success in the latter. We are under the deepest debt of gratitude to the Universities of this country for the brain power they provided, and it seems impossible

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to believe that the liaison developed between the Universities and the Service will be allowed to disappear.

I feel it may be said that out of the First World War Canada emerged as a nation. After the Second, she can certainly lay claim to being a maritime one. As far back as 1864, Mr. Thomas D'Arcy McGee said:

"I rejoice moreover, that we men of insular origin are about to recover one of our lost senses; the sense that comprehends the sea—that we are not now about to subside into the character so foreign to all our antecedents, that of a mere inland people. The union of the provinces restores us to the ocean, takes us back to the Atlantic, and launches us once more on the modern Mediterranean, the true central sea of the Western World."

I might perhaps commend these words to you who are not blessed with a Nova Scotian birthright.

With the war over, the whole nation turns its eyes towards reconstruction for peace, and it is my confident hope that the sea-borne trade of Canada will be one of the greatest factors in our economic security. To nurture the sea-borne trade, to encourage and train Canadian citizens for the sea, the Canadian Navy of the future can and will do a great deal. Our planning envisages first the maintaining of sufficient men and ships within our economy that we may foster the sea tradition among our people, thus building up our merchant marine. Secondly, in the light of what we have learned in this war—what can be done by the super-plane and the atomic bomb—we must design our Navy so that it will keep pace with the enormous changes that have taken place, and as seamen, we must turn our eyes to the sky in building for the future.

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AIR MARSHAL LLOYD S. BREADNER, C.B., D.S.C.

I do, indeed, count myself signally honoured to be able to attend this banquet that does honour to, and commemorates the birthday of, James McGill—the founder of Canada's truly great McGill University.

McGill University graduates have played, and are playing, a large part in the development of the Royal Canadian Air Force. As examples I mention that a McGill graduate, the late Air Commodore Lindsay Gordon, was successively Director of Civil Government Air Operations, Director of the Royal Canadian Air Force and lastly District Officer Commanding the Military District based on Winnipeg. Presently, we find McGill graduates holding key positions. The first officer in this category is appropriately named for this occasion: he is Air Vice Marshal Frank McGill, a member of Air Council and in charge of all R.C.A.F. Supply, Equipment, Organization and Establishments, all of which, I know, is a lot of responsibility. Again, all R.C.A.F. Aeronautical Engineering, Inspection, and a measure of direction of aeronautical research, is the responsibility of McGill graduate Air Commodore Art. James. In the medical field two names are outstanding—firstly I mention McGill graduate Wing Commander John Nichols: Wing Commander Nichols had charge of all our work on vision. His efforts in this direction were of outstanding value to the R.C.A.F. and the Royal Air Force. Also in the same field I mention Wing Commander Evelyn, whose research on night vision provided valuable findings that quickly attracted the respectful attention and admiration of the United States Naval Authorities.

McGill University, along with other Universities of this Dominion, has made a grand contribution to our national standing by the furtherance of the Air Training Corps and the training of Radar technicians.

Further, I wish to draw attention to that little known group called "Operational Research" to which McGill University contributed so handsomely. This group consisted of a galaxy of staff and graduates gathered together by the R.C.A.F., working with the National Research Council. Their efforts did wonders to improve the operational efficiency of the R.C.A.F. and the Royal Air Force in the varied operations of these Services.

In the few minutes at my disposal it is not possible for me to recount fully the contributions McGill University and her graduates have made

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to the Royal Canadian Air Force. I hope however that it is apparent to you that McGill University looms large in the R.C.A.F.

I am very proud to think that such a distinguished University as McGill has seen it fit to do me the honour that is planned for tomorrow. I am deeply conscious of the fact that it is a tribute to the Royal Canadian Air Force in recognition of the splendid achievements of all who served with me in that Service during the late war. I pay homage also to the memory of those gallant officers and men who, having given their lives, have made their noble sacrifices proud pages in Canada's history. On the declaration of war the Royal Canadian Air Force literally passed from youth to manhood in one day and grew in stature and strength to become a powerful force over 200,000 strong before V.E. Day. All were volunteers and ready to give their all for Canada. These men and women are now, with hostilities ended, returning to their civil occupations, to schools and colleges; many are already enrolled in McGill University, many more will follow.

The disbandment of the R.C.A.F. is proceeding rapidly. Personally, I regret to see the loss to the Service of so much valuable experience. I appreciate full well that Canada cannot maintain in peace the Air Force that was developed in the last war. But the fact remains that Canada must retain a sizeable portion of her Air Force. Peace never lasts forever. Canadians cannot afford to gamble that they will be able to mobilize in their customary leisurely fashion.

I know the hue and cry that will be raised to cut taxes at the expense of the armed forces. Canadians are proud of their country and their world position. They must be prepared to pay the insurance premium necessary to guarantee them against loss. This can only be done by the maintenance of adequate defence forces. An adequate Air Force is in my opinion a prime requisite; under present circumstances this Service should number not less than 30,000, and be equipped with modern aircraft and all facilities befitting our position as a major nation.

I am proud to have served in and headed the Royal Canadian Air Force, and I particularly want to see a strong Royal Canadian Air Force in the years of peace, as a living memorial to those whom we now honour and in tribute to whom we must go forward.

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THE PRINCIPAL AND VICE-CHANCELLOR

Mr. Chancellor and Members of Convocation:

More than two centuries ago, the Founder of this University was born in the city of Glasgow. As we meet once more in this commemorative Convocation that recalls his birth, it is my privilege to extend to all of you a word of welcome.

I want especially this afternoon to welcome the parents and friends of those who are about to receive their degrees. It is a proud moment for you. The years that lie behind us have been a time of strain and testing, a time that has sifted out the souls of men and women here in Canada and throughout the world. It has not been an easy time for study, but these young men and women—your sons and daughters—have splendidly overcome obstacles. You are entitled to be proud of them today, and we who, as teachers, have worked with them are sharers in your pride.

I should also like to offer my congratulations to each one of you who will today be numbered among the graduates of this University. There have been times, I think, when some of you were doubtful about the prospects of your graduation, but you have dispelled these doubts by your own efforts, and today you set out upon your chosen careers at a moment when the Dominion of Canada and every nation in the world realizes its need for men and women who combine expert knowledge with wisdom. There is much for you to do, a multitude of problems for you to solve, honours for some of you to win. We who remain here will watch your endeavours with increasing interest, and share the joy of your accomplishments. Good luck to you, and Godspeed.

Since James McGill was considerate enough to be born at this time of the year, when the University opens another academic session, I will also take advantage of the opportunity to welcome the members of the freshman class. Those of you who come directly from high school are luckier than the last six generations of students. You begin your course in peace, and you are privileged to have as classmates many of those who have returned from campaigning to enter upon their studies. You already know that this is the largest freshman class in the history of McGill University, and I think from what I have seen that its quality is as outstanding as its size. To each

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one of you, civilians and veterans alike, I want to offer heartfelt good wishes as you set out upon your academic career. May the journey towards your own graduation be smooth and profitable.

Each time that we assemble in this hall for Convocation our thoughts recall the sons and daughters of McGill who are not present in the flesh—the great and familiar faces that are forever a part of this University. It is traditional, on Founder's Day, that we should praise famous men and our fathers who begot us. But today the unseen host is larger than it has ever been; and some of those who are vivid in your memory, and in my own, had no long span of years upon this earth. Today we give thanks for Victory and the end of conflict. We remember the immensity of the debt we owe to every one of those who bought by blood and sacrifice the opportunities that we enjoy today.

Some of them are on this platform. This afternoon McGill University will confer upon our distinguished guests, the leaders of the armed forces of Canada, the highest honour that is in our gift. We confer it with sincere appreciation of the outstanding personal contribution that each of them has made to the attainment of victory, in token of our admiration of their leadership and our pride in their achievements. Their names are linked in our thoughts with the name of that great Canadian whose memory is perpetuated by this Gymnasium-Armoury.

But there are unnumbered millions of our creditors to whom we cannot thus express our sense of gratitude, men from many lands and speaking divers languages, who fought by sea, on land and in the air. Thousands of them went out from this University, and each one of us recalls with eager joy the faces of those who were his friends. You would not wish me to recount their deeds. If I should attempt to do so, the words might bruise the lonely hearts of some who have only memories for companionship, and it would also embarrass others who sit among us today if I should tell you of the things that they have done.

I do not want to trespass upon the ground that will be covered by our distinguished guest, the President of Harvard University, in his address this afternoon. His own brilliant record personifies the contribution that American and Canadian Universities have made to the winning of the war, and it is apparent that they must provide an equally courageous leadership during the years of peace that lie ahead. This is not a time for sentimental

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memory or emotion: it is a time for resolution. Let us be sure that we, who stand forever in the debt of those who fought, are not embarrassed in the years to come by our forgetfulness. We cannot discharge that debt either by speeches or by the bestowal of honours. If this Thanksgiving has any significance at all, it means that McGill University, and each one of us as individuals, solemnly resolves to strive unceasingly for the attainment of the things for which they fought. It will take us all our lives to pay that obligation, and the instalments will be heavy.

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PRESENTATION OF HENRY DUNCAN GRAHAM CRERAR

by Major E. de L. Greenwood, on behalf of Lt. Colonel J. M. Morris,
Officer Commanding McGill Contingent, Canadian Officers
Training Corps.

Mr. Chancellor:

I have the honour to present to you that you may confer on him the degree of Doctor of Laws, *honoris causa*, General Henry Duncan Graham Crerar, Commander of the Canadian Forces Overseas; a distinguished soldier whose long career has been one of unfailing usefulness and honour, he unhesitatingly accepted in dark and ominous days the vast responsibility of leading and directing the Canadian Army on the battlefields of Europe in the war now successfully ended; by his fearlessness, his wisdom, his rich experience and his power of inspiration he contributed in large measure to the final victory in which Canada had so illustrious a part and in which his fellow countrymen will have everlasting pride. McGill is proud today to do him honour because of his courage and his unselfish dedication to the cause of justice and freedom in the world. I have, therefore, Sir, great pleasure in presenting this great Canadian who will live forever in the high regard and deep affection of his countrymen.

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PRESENTATION OF GEORGE CLARENCE JONES

by Lieut. Commander V. C. Wynne Edwards,
Commanding McGill University Naval
Training Detachment.

Mr. Chancellor:

I have the honour to present to you, in order that you may confer upon him the degree of Doctor of Laws, *honoris causa*, George Clarence Jones, Companion of the Most Honorable Order of the Bath, Vice-Admiral in the Royal Canadian Navy, and Chief of the Naval Staff. A member of the original class of cadets at the Royal Naval College of Canada, he has served the Canadian Navy from its infancy. Exceptional skill for organization and leadership have long marked his rise to pre-eminence, and fitted him to bear the heaviest burdens during the last six years of war. His has been a leading part in the Battle of the Atlantic, at first in action and later in even more exacting roles behind the scenes, as Commanding Officer Atlantic Coast, as Canadian member of the Permanent Joint Board of Defence, and as Vice-Chief and Chief of the Naval Staff. Through him, you will do honour to the whole Service, whose life and traditions he so aptly personifies.

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PRESENTATION OF LLOYD SAMUEL BREADNER,

by Squadron Leader C. H. Carruthers,
Commanding McGill University
Air Training Squadron

Mr. Chancellor:

I have the honour to present to you, in order that you may confer on him the degree of Doctor of Laws, *honoris causa*, Air Marshal Lloyd Samuel Breadner, C.B., D.S.C., Chief of Air Staff of the Royal Canadian Air Force, and recently Commander-in-Chief of the Royal Canadian Air Force overseas. Nearly thirty years of service with the Royal Naval Air Service, the Royal Air Force and the Royal Canadian Air Force have brought him to the supreme command of that branch of this country's armed forces which contributed so signally to the collapse of the enemy and the victory of our cause. The provision of scores of thousands of fighting airmen through the British Empire Air Training Plan, and the magnificent success of the R.C.A.F. squadrons in all commands overseas are proofs of his technical proficiency and his wise leadership. McGill University, which has long taken an interest in aviation and has supplied hundreds of skilled airmen to the service, acknowledges with pride and gratitude his contribution to the preservation of our privileges and opportunities.

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PRESENTATION OF JAMES BRYANT CONANT

By the Principal and Vice-Chancellor

Mr. Chancellor:

I have the honour to present to you a fellow-toiler in the fields of academic administration, who has carried the burdens of his office with distinction but not allowed them to interrupt his brilliant career as a scientist.

Graduate of Harvard College, he won successively the highest degrees of his Alma Mater, and has been honoured by many other institutions in token of their admiration for his achievements. As an instructor in Chemistry at Harvard, during the dark days of the first World War, he left his laboratory to accept a commission in the Chemical Warfare Service of the United States Army.

President of Harvard University, and one of the ablest chemists on this continent, he repeated that public service during the struggle from which we have so recently emerged and, as Chairman of the National Defence Research Committee of the United States, led that splendid team of scientists which contributed so much to the victory for which we give thanks today.

In the name of the Senate, Mr. Chancellor, I therefore present to you James Bryant Conant—Scholar, Scientist, Administrator, and Public Servant—in order that you may confer upon him the degree of Doctor of Science, *honoris causa*.

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DOCTOR JAMES BRYANT CONANT

President of Harvard University

Let me first say how delighted I am to be here once again in Montreal, and how much I appreciate the honor conferred upon me by McGill University. Montreal and Boston have long had close associations; they are near together in more than one sense of the word (though I confess I did not realize the full extent of the geographic proximity until I found the overnight sleeping service had been discontinued because of the shortness of the run!). McGill and Harvard likewise have many bonds in common; my visit here today is one more bit of evidence of the never-ending academic reciprocity which flows across the unarmed border, and in particular of the special association between your university and mine.

The last terrible half a decade has brought all of Canada and the United States in closer contact than ever before. At first many of our citizens joined your fighting forces, and since Pearl Harbour we have been full partners in a common effort against the enemies of freedom. Together we have fought and worked to speed the day of victory—the day when the Axis powers surrendered without condition—a day which at last arrived.

The fact that you here in Canada as a member of the British Commonwealth of Nations defied the might of Hitler when he was at the zenith of his powers, and by your efforts gave direct assistance to those who refused to surrender the British Isles, makes all of us in the United States who understand the true nature of the war forever in your debt. By fighting to preserve your freedom, you defended ours.

But the days of war are past. It is the tasks of peace that now confront us. We have been engaged in a common enterprise—soldiers and sailors, business men, engineers, scientists, public servants have been working hand in hand. I had the privilege personally of participating in more than one cooperative enterprise involving technical and military men from Canada, the United States and Great Britain. I know, therefore, of what I speak. Surely, we must continue to cooperate in the days of peace. The goals are different, to be sure; the methods of cooperation therefore must take different forms. But basically we share a common destiny on this continent; we must, therefore, share our problems.

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In this academic gathering I may be permitted, perhaps, to address myself solely to an academic subject. There are very grave and pressing problems, indeed, confronting our two nations—problems concerned with political science and economics; these matters must be in the forefront of all our minds. Nevertheless, this afternoon I should like to leave all these aside and address myself to the query: what should be the role of our universities in providing the broad philosophic bases for our modern civilization? A large subject, I must admit, therefore one which I can deal with only in a fragmentary way in these brief remarks.

May I start by telling a story connected with the atomic bomb? For I understand that since August 6 no address is complete without a reference to that subject. The day after the news of the bombing of Hiroshima, a chemical engineer met an eminent professor of political science in a Washington club. "What is your reaction to the atomic bomb?" the chemist inquired. "My reaction is," came the reply, "that my scientific colleagues on the faculty will be more insufferable than ever."

Quite apart from the atomic bomb, we are all aware that the application of modern physics and chemistry has revolutionized the art of war. Quite apart from the special international problems created by the work on atomic energy, the scientist pure and applied has acquired a notoriety or prestige (depending on how you look at it) which has its repercussions within as well as outside the academic walls. As measured in terms of the life span of universities, this intrusion of experimental science into our cultural life is a new phenomenon and what we are now seeing is, perhaps, only a still greater acceleration of a change which started a hundred years ago. In the public mind this intrusion is quite properly connected with the amazing feats of applied science and the ever-increasing industrialization of the western world. But so far science, pure and applied, has been to a large degree superimposed on our cultural pattern inherited from the past. In a sense modern man has never domesticated his new machines nor the basic intellectual disciplines from which these new machines have sprung. On all sides we see signs of restlessness as a consequence of this situation and a misapprehension of what can and cannot be accomplished by scientists and scholars. For example, considerable nonsense is often talked about applying the scientific method to social and political problems. What is this scientific method? The usual philosophic inquiries into the question seem to me a bit unreal when one surveys the range of methods actually employed by sciences as remote from each other as geology, systematic

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botany, organic chemistry, and mathematical physics. Perhaps science is after all only organized common sense, preferably derived from experiment and preferably organized on a quantitative basis.

Perhaps by the scientific method one means only an impartial examination of a situation, an honest attempt to use rational powers to analyze complexities. If so, the phrase is badly chosen. It blinds us to an important distinction between situations where value judgments are by necessity involved and those where they can be eliminated from the frame of reference. Scientific methods, if we are to use the words with meaning, can only be employed where right and wrong have a factual and not a moral connotation.

At the risk of riding my own hobby too hard, I should like to present to this learned audience a classification of the fields of learning which perhaps avoids some of our present difficulties.

In the second book of the *Advancement of Learning*, Bacon wrote as follows:

"The parts of human learning have reference to the three parts of man's understanding, which is the seat of learning: history to his memory, poesy to his imagination and philosophy to his reason."

Three centuries of the very activity for which Bacon was pleading have made his classification now inadequate. Seen in historical perspective, many products of man's memory and reason must be classified together. In the twentieth century we have a vast fund of knowledge accumulated by the labors of historians, archaeologists, experimental scientists, and observers of natural history. We roam freely in fields of which the author of the *Advancement of Learning* never dreamed. And we are confident that the process of expansion has far from reached the end. With Mr. Churchill we can believe that "the empires of the future will be the empires of the mind."

Looking back over the journeys of the pioneers who opened the new vistas for us, we can speak with assurance of the advancement of learning. Indeed, here and there we can even hazard an opinion as to the rate of progress and complain about those times and places when it seems unduly low. Bring back to life a student of antiquity of a century or two ago and confront him with the present status of archaeology and ask him whether or not learning has advanced. Can there be any doubt as to his answer? Repeat the hypothetical operations in physics or biology or mathematics

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and ask the earlier investigator whether or not he would have counted himself blest by fortune if he could have stood where his successor stands today. I may remark parenthetically that this imaginary operation can be performed with considerable assurance, using much shorter intervals of time and more restricted areas of interest. In this way one can give meaning to the word progress as applied to intellectual undertakings.

We would do well, it seems to me, to merge portions of Bacon's two classes (his first and third), history and philosophy, into one which we may designate "accumulative knowledge." The labors of a dozen generations of experimental philosophers are clearly more closely related to archaeology than to what is now embraced by the term philosophy. In this area we can speak of the advancement of learning and indeed apply such tests as I have suggested to see whether or not learning has advanced over the course of the last few generations. We can even estimate the chances of further rapid progress on a given restricted front.

Let me now turn from the first category—accumulative knowledge—to the other two which, following Bacon closely, I shall designate as poesy or, if you prefer, poetry and philosophy. Whereas the idea of progress is both valid and significant in the first category, accumulative knowledge, in the other two the concept is not only invalid but a positive deterrent to relevant undertakings. And at this point, lest all but scientists, mathematicians, and archaeologists leave the room in protest, I hasten to assert that I place no halo over the word progress. There is no hierarchy implied in my classification.

Indeed, anyone who wished to give poetry or philosophy an inferior place as compared to accumulative knowledge would soon find himself in an untenable position. For it is obvious that poesy or poetry on the one hand and philosophy on the other together hold the keys to man's immediate future, including the future of the advance of accumulative knowledge. That this is so, current history provides ample proof. Nazism triumphed in Germany not because the Germans were lacking in power to advance learning but because bad poetry and a wrong philosophy prevailed.

All the usual fields of scholarly activity are included in the three categories I have named: accumulative knowledge, poetry, and philosophy. Many cut across two and even all three. For example, history as an interpretation by the present of the past must rest on accumulative knowledge, but consciously or unconsciously reflects the philosophy of the writer;

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and it has been said more than once that every great historian is not only a historian but a poet. In general, the humanities and the social sciences, to use our modern terms, cut across all three fields, and only in a few instances does the major part of a traditional division of these subjects fall within the boundaries of accumulative knowledge.

The significance of poetry and philosophy is not to be measured in terms of progress or advance. Try, for example, my imaginary operation of bringing back to life great figures of the past: We can hardly doubt how Galileo, Newton, Harvey, or Winckelmann would respond to a glimpse at the contemporary answers to the questions which they raised. It is far otherwise with Michelangelo, Rembrandt, Dante, Milton, or Keats. It is far otherwise with Thomas Aquinas, Spinoza, Locke, or Kant. You and I might argue until midnight whether or not the particular artist or poet or philosopher would feel that the present state of art or poetry or philosophy was an advance or a retrogression from the days when he himself was a creative spirit. There would be no unanimity among such an audience as the one I am addressing here today.

We are not dealing with accumulative knowledge when we speak of poetry or philosophy. We are not dealing with an activity where the word "research" can be profitably employed to describe the intellectual labors of original thinkers or learned men. We are not dealing with activities to which the adjectives "scientific" or "non-scientific" can be applied. But let us not assume that therefore poetry and philosophy can be dismissed as having no practical effect. On the contrary, we are dealing here with something that influences for better or worse the ambitions and the conduct of civilized man. In these areas the advance of learning is a relatively trivial affair; the relevance of a writer or a philosopher is tested by the reactions of human beings.

The academicians whose lives are spent studying man and the works of his creative intellect and imagination are forever dealing with a subject which unlike the atom can and does "talk back." Unless a professor of the humanities or the social sciences really wants to sit in an ivory tower, unless he wishes to proclaim that his teachings are totally irrelevant to the age in which he lives, he is by necessity in contact with the vital currents of the day. Unlike the pure physicist, chemist or astronomer, he cannot divorce himself in his professional capacity from the affairs of men. It has been well said that a poet's garden should be located not in the market place

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but hard by. By the same token, a university should be bounded by both the market place and the poet's garden with many open gates between the three.

At this moment in human history, the public is impressed with the application of the knowledge accumulated in the last few hundred years in regard to certain aspects of inanimate nature. On balance, the majority believe this application to have been for the national if not the international welfare. Therefore, each industrialized country encourages further progress in this area—further work in pure science. It further encourages in times of peace concerted effort to apply the new knowledge to specific problems, be they concerned with transportation, clothing, food, or private and public health; and in times of war, still more concentrated efforts on instrumentalities of destruction.

How much these applied efforts depend on the results of the pure scientists is too little understood. And this confuses our thinking about what can be accomplished by research on human problems. People keep saying, "Why can't we spend a lot of money on basic research in the social sciences and come out with something that is as revolutionary as the atomic bomb, but something that will work for good—for example, an international concert of nations to keep the peace." Such talk confuses immediate targets with long-range goals. It also confuses the progress of accumulative knowledge with the wisdom of the philosopher and the inspiration of the poet. Let us remember that in the last World War all the scientists and engineers in the Allied Nations could not have in a few years produced a single piece of radar equipment or released a watt of atomic energy; indeed, they would not have believed that there was such a thing as atomic energy. Nor if you had then had the power of prophecy and foretold the need of these instruments by our people in a second World War could you have suggested to physicists and chemists how to get the basic knowledge from which these applications came. But given any immediate need, be it peace or war, a concentration of scientists and engineers on a specific target will insure the maximum utilization of the basic knowledge then available. And to date at least, each successive application has had almost revolutionary social consequences.

Compare this situation with what confronts us when we are concerned with the behaviour of human beings. We have accumulated a certain amount of basic knowledge about man and his collective activities in the last

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hundred years; this knowledge is by its very nature less divisible into pure and applied knowledge than in the case of inanimate nature. For to "validate" an hypothesis in the social sciences, for example, one must study groups of human beings and thus at once become concerned with practical affairs. But the point I wish to emphasize is that the task of developing new weapons and that of devising a new international order are quite different. They are different because the first depends on something relatively new in history, rapid progress in accumulative knowledge about inanimate nature; the second repeats a challenge which has confronted man throughout recorded history—how can human beings work together. As matters stand today, I emphasize this point: we must rely on much the same knowledge and techniques to answer this last question, to solve the practical problems involving human beings, as did our ancestors a hundred years or so ago. So far at least, it is only in the fields of physics and chemistry, and to a slight degree in biology that the accumulation of basic knowledge has been so rapid that new applications arise each decade to help or complicate our daily living. Whether or not a hundred years hence the accumulation of basic knowledge about human beings will have reached a comparable point, no one can tell. It is well worth pushing along all lines of accumulative knowledge and nowhere is the need greater than in the social sciences—but let us not fool ourselves as to the immediate dividends; even under the best conditions the time lag is very great.

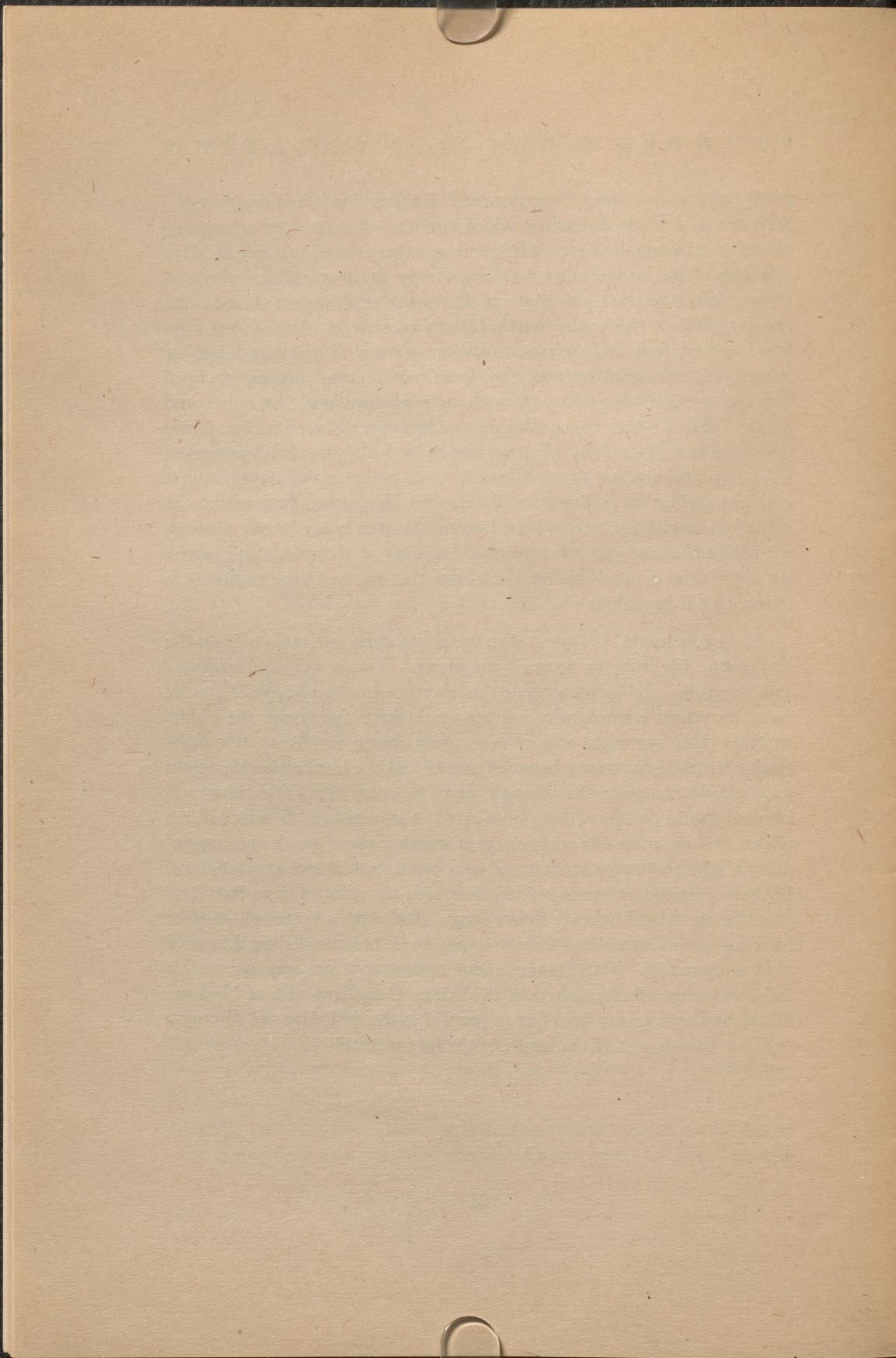
But does this mean we must be defeatists about solving the human problems? To my mind, not at all. It only means we should recognize the kind of activity that is required. History shows that groups of human beings have varied enormously in the success or failure with which they have grappled with political, social and economic problems—problems to a large degree of organization. They have been successfully solved when a relatively few wise men with experience and selfless public spirit have worked together and when these men have been able to persuade the others of the correctness of their views. I see no reason to suppose the situation is otherwise today. The one new factor is an enlargement of the group of men who must be persuaded—the growth of democracy in short. But this has been a gradual process and with the war at a triumphant end we have no reason to be defeatist about the efficiency of the democratic process.

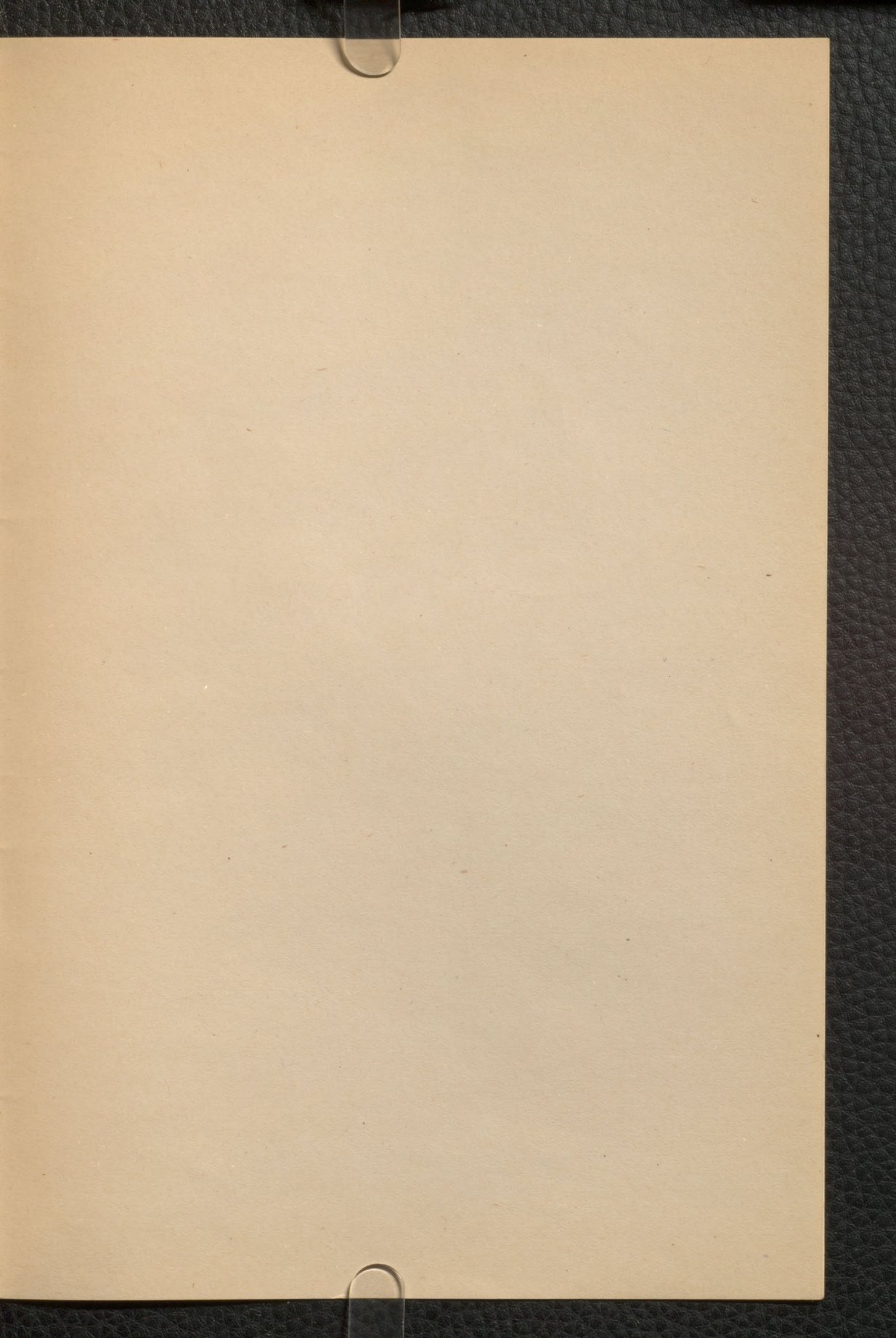
Note, however, if you will, the adjectives that are almost unconsciously used about those to whom we look to solve our immediate political and

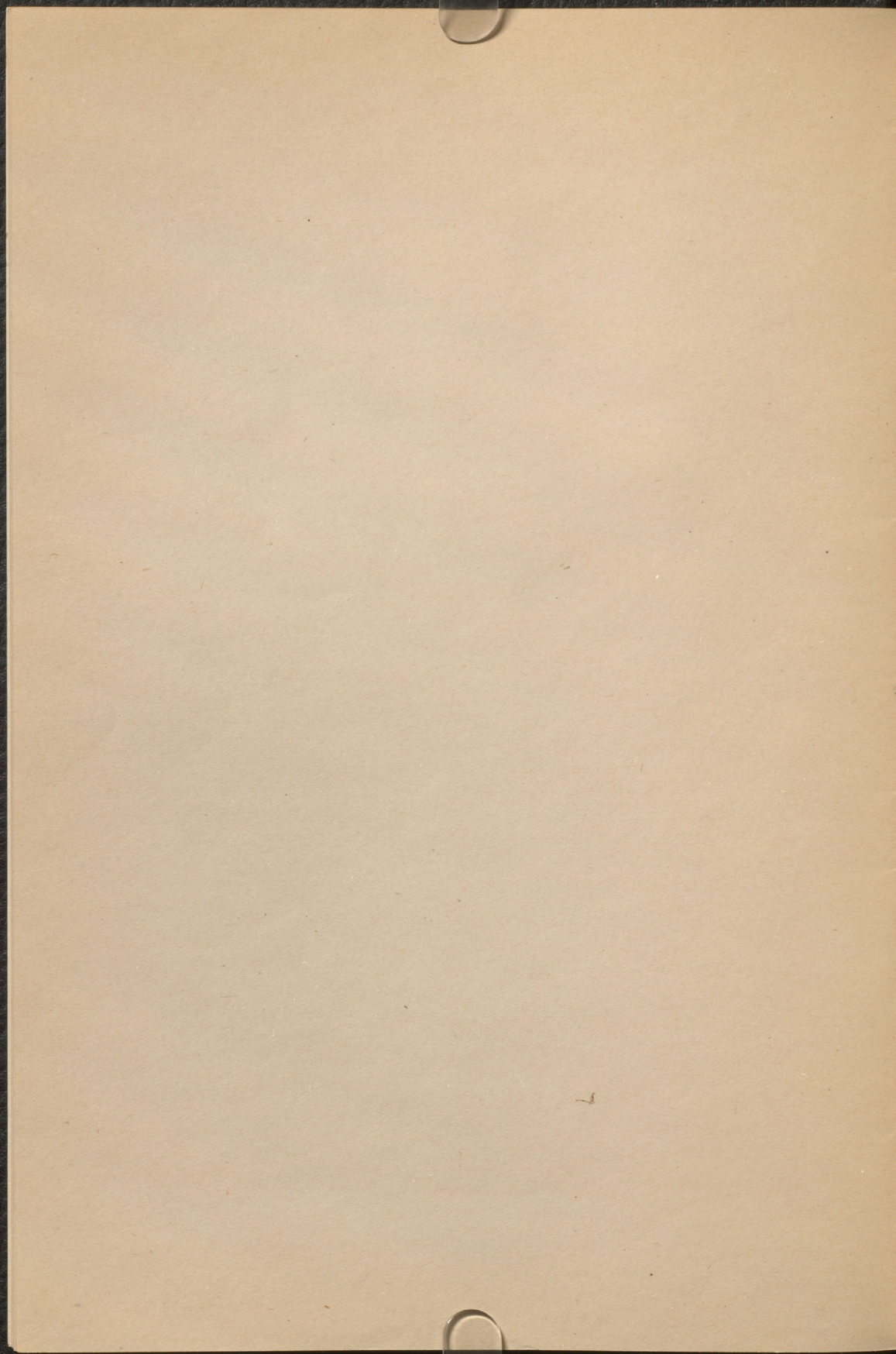
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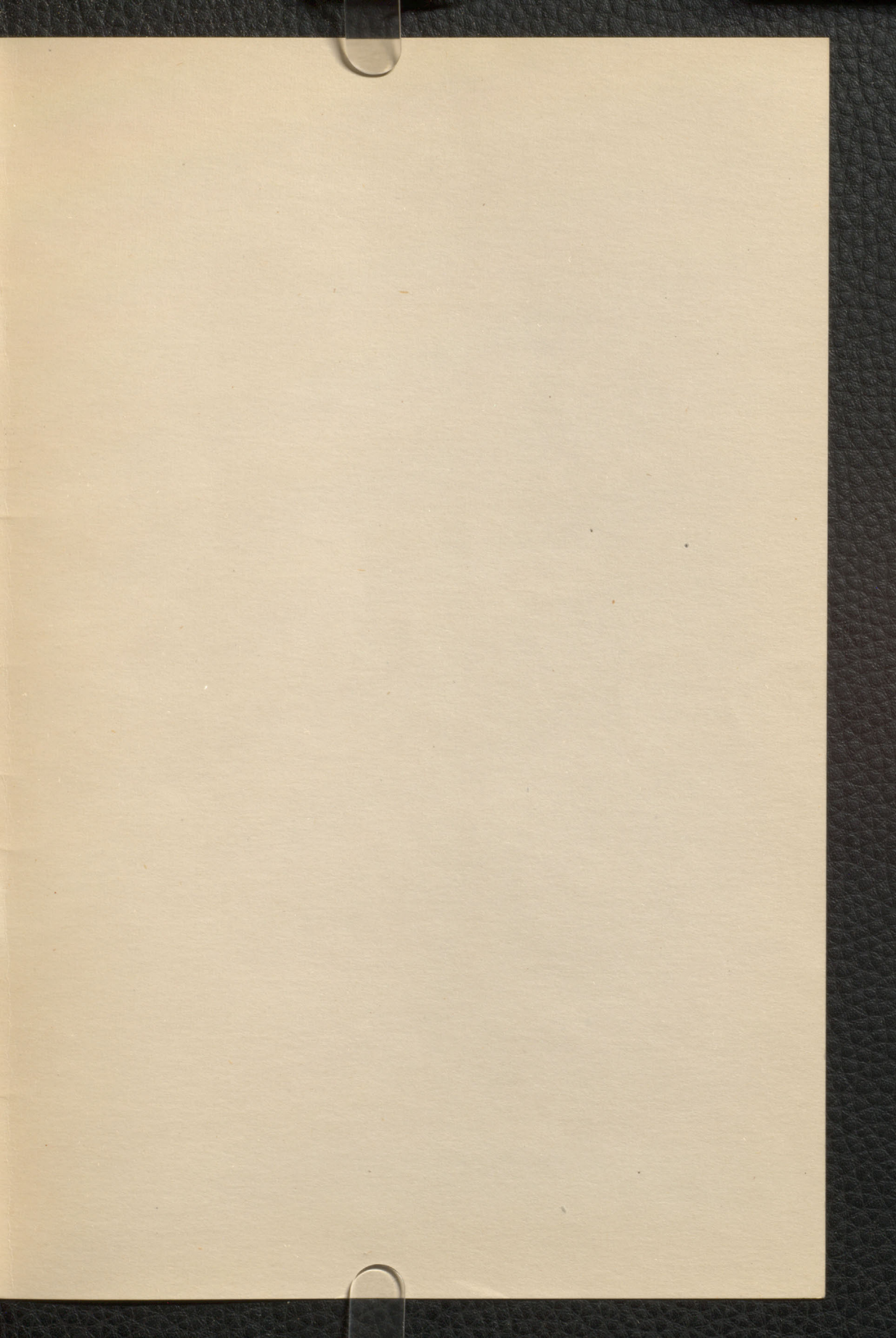
social problems—"wise," "experienced," "selfless," and "public spirited." Such words describe behaviour which is not at all related to progress or lack of it in accumulative knowledge; it is rather related to those creative activities of the human mind we designate by the words philosophy and poetry. It is based on a philosophy of life itself, a renunciation of immediate greedy goals—a philosophy which history records is, alas, all too rare. It is based on ideals and aspirations which can never be precisely defined or formulated, on sympathy and experience with human beings, obtained directly or vicariously through wide acquaintance with literature and history. All of which to me adds up to education. Therefore, I conclude that it is through its direct effect on rare individuals gifted with powers of leadership and insight that philosophy and poetry make their greatest practical application to human welfare or the lack of it. And within the area of the social sciences and the humanities, it is today largely through the philosophic and poetical aspects of the different disciplines and not by the application of accumulative knowledge that we may hope to find help in solving our immediate problems.

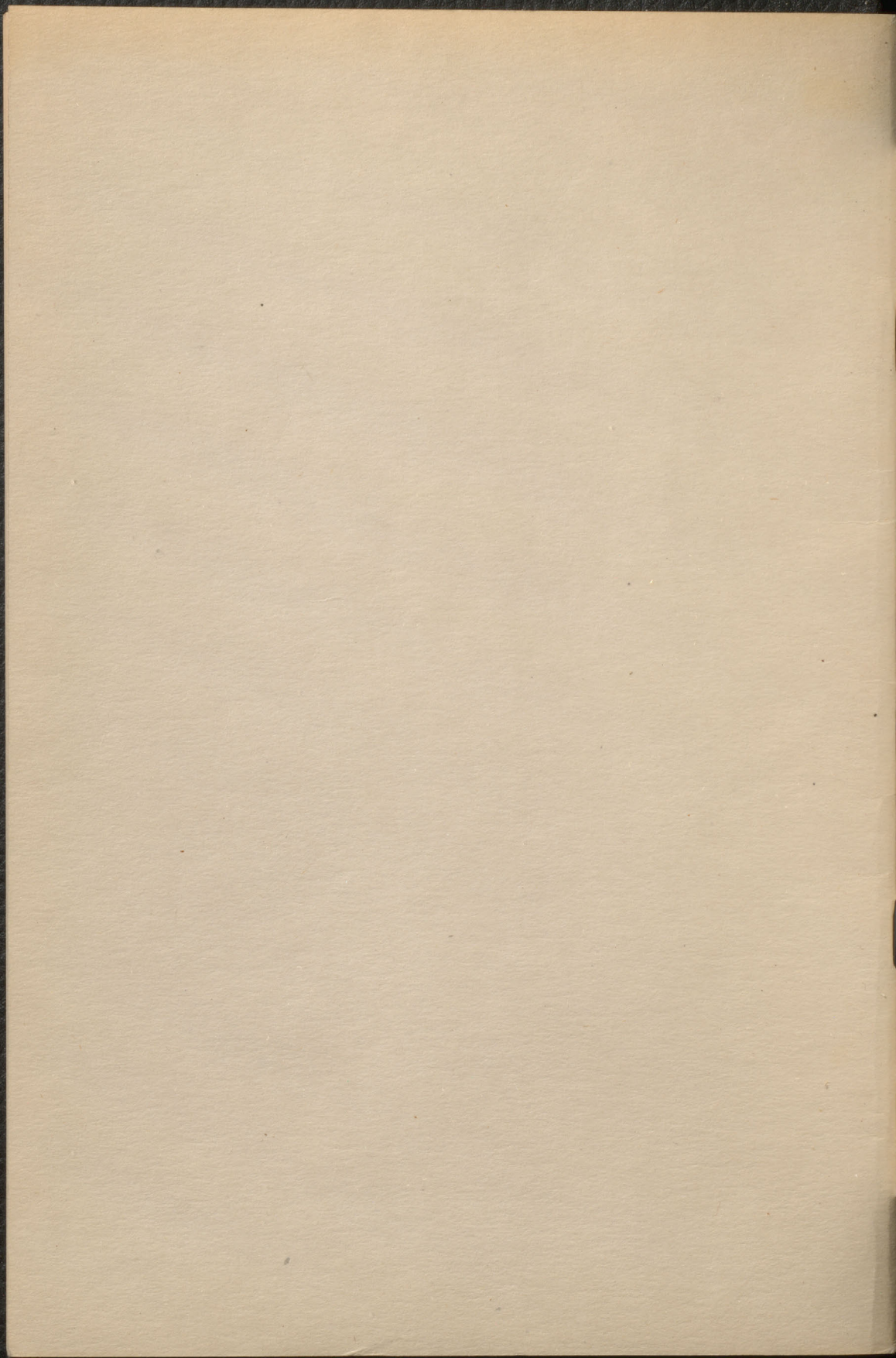
So in conclusion, I suggest that we might close our ranks within the universities by dropping some of our present slogans such as "research" and "scientific" and by recognizing the relevance and significance of various ways by which learned men and active thinkers may assist the public welfare. Thus we might achieve more unity among ourselves. We might resolve the false dichotomy between science and the humanities; we might more clearly recognize that though many in every area of learning will labor on special problems, there is no part of a university's life which if it is relevant to our culture is without its practical application. If the communities of scholars in your country and mine could thus achieve a united front, I believe a unified, coherent culture breathing the spirit of democracy in a scientific age would develop before long. And with a better philosophic basis for our industrialized society some of our present ills would surely tend to disappear. If this seems undue optimism, I can only say to this audience composed of members of the British Commonwealth of Nations: if faith and courage can hold fast as you did in the dark days of 1940, why need we now despair of the future of the human race?













**The Graduates' Society of
McGill University**

*The enclosure is being mailed to you
from the office of The Graduates'
Society, for your information.*