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Many years ago an eminent divine was much perturbed over foibles of the younger generation. The particular manifestation which aroused his ire was a current fashion of wearing the hair in an elevated mass on the top of the head. He decided to preach a sermon on the subject and chose as his text "Top not, come down." This text he found in that verse of the scriptures which reads: "Let him who is upon the house top not come down." By a similar method I might derive a text for my remarks today from that beautiful apostrophe: "When I consider Thy heavens, the work of Thy hands, the moon and the stars which Thou hast ordained, what is man that Thou art mindful of him?" I want to consider awhile with you the old problem: "What is man?"

In a sense there are as many answers as there are individual men; no two men are precisely alike. But we have so much in common as to afford ample grounds for this discussion.

The invitation to address you was presumably extended under the supposition that I am of those not yet dead, exactly, but at least "gone on before," that I have achieved a more or less unwelcome place in the over-praised and over-blamed "older generation." As a student of the ways of men I am at once conscious of a fundamental biological difficulty. Man as a race has survived under the operation of two conflicting tendencies, a spirit of adventure, that is of experimentation.
combined with a spirit of conservatism. These tendencies are reflected in two characteristic attitudes. The youth says: What is and has been is wrong, let us seek something better. Age replies: that which has survived the ages must be right and profitable, let us hold onto that which is good. The millennium will be more prominent when youth will have attained wisdom enough to accept the facts that age has painfully acquired and when age will applaud the honest endeavors of youth to find a better way. A sounder knowledge of biology would go far to assuage the fears of those who deplore the radicalism of college students. To my mind, an outstanding defect in American colleges today is precisely the lack of self-reliant individualism, of the zest of mental adventure. There is far too much of spiritless conformity.

I would beguile you awhile, today, into the acceptance of this point of view: Come, fellow hopefuls, let us see what these old fellows, the biologists, have to offer that may help us to reach their age happier and wiser men and women than our predecessors have been.

Perhaps this desire is not quite hopeless. The other day I encountered a man well known to all of you, a man who has watched students and instructors come and go on this campus for many years. I wished him good morning. I trust that observation of the lack of pigment in, and paucity of, his once flowing locks induced some element of deference in my tone. At any rate,
he retorted, "Well, Bud, how are you this morning?" That "Bud"
I shall cherish as a sincere though unintended compliment.
Despite the fact that since I was in your place I have watched
twenty classes come and go, my sympathies are still with those
whose eyes are toward the future.

The problem stated in my text I should like to consider
with you in this way: Given twenty-four hours a day to spend,
how can these be spent to assure the maximal return? Where
are the bargains of life to be found and how is one to know them
when he sees them? I am going to take up the problem on what I
fear some of my eminent colleagues and maybe some of you will
consider a very low plane. I propose to deal with that problem
in which everyone of us is honestly most deeply interested,
namely that of his own individual happiness. I propose to deal
frankly in terms of selfishness.

Some of you will perhaps conclude forthwith that this
presents no problem at all. To such I would say: "Circumspect—
look about you." How many people do you know who are as happy
as they might be; who are as intelligently selfish as they might
be? Far from being easy, the problem is deep and intricate.
Before one can be intelligently selfish he must have sought and
found an intelligent answer to the question of my text, "What is
man?"

Superficial and passing factors aside, to get at the
problem, what is man, one must project the present into the
remote past. In common, so far as I know, with every living biologist who has first hand knowledge of the pertinent facts, I believe that man is the outcome of millions of years of experimentation upon the part of nature. As a recent writer has pointed out, if the history of mankind were represented by the life time of an individual, all that we are accustomed to think of as most characteristic of the present has come about within the past day or two. The wonders of our generation, such as radio, have come within the past few minutes. Humanity has changed in fundamentals no more within the past two thousand years than you or I have changed since day before yesterday. We are perforce, then, in seeking an answer to our problem driven back into the jungle. Any human trait that can not be found in fairly definite outline in the jungle is too recently acquired and too superficially worn to be of much fundamental significance.

In dealing with racial evolution we are wont to think too much of mere anatomical details, of molar teeth, of shoulder joints. Without going into controversial details as to the forces that have led to racial changes, let us consider the fact upon which biologists are agreed that, taken by and large, those hereditary traits that have arisen and proved helpful have been the balancing straws permitting survival, whereas significantly hurtful tendencies have condemned the strains in which they appeared to go down in the implacable struggle for existence.

This applies quite as well to psychological as to the more easily understood structural deviations. As to whether
psychology is merely a manifestation of intimate structural
configuration, I leave to wiser or more confident expositors.
For our purposes we can class as psychological or, better,
psychobiological, the emotions and the so-called instinctive ten-
dencies that determine most of our conduct and, hence, that have
largely determined our survival as a race. Any biologist who
senses the wider aspects of his problem must take these into con-
sideration.

I think it can safely be said that the human species
has reached its dominant position in the scale of life especially
through the operation of three trends, instincts if you will.
These trends are: first, a gratification of the egoistic impulses,
the satisfaction of personal wants; second, the instinct for
accomplishment; and third, the tendencies which have to do with
group welfare, such as protection of the weak and mutual assistance
in times of need. There are, of course, numerous other hereditary
trends, of greater or less moment, but these latter are over-
shadowed by the three first mentioned. The exercise of the
fundamental instincts is accompanied by a remarkable condition with
which we are all very familiar, and of which we have much yet to

emotional

learn, namely, experiences that to a very great extent make or mar
happiness. This is said in no disparagement of cold, clear think-
ing. Clear thinking is of the utmost importance, but in the last
— analysis is important only as it serves to guide the in-

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stinctive trends. It has little driving force. The eloquent

quack who appreciates this fact has a great advantage over the

eminent scholar who does not.
The thesis I wish to place before you is that happiness is to be secured in largest measure and with surest certainty from a judicious and well balanced cultivation of the three fundamental instinctive trends. It is true that there is some variability in the distribution of these trends in different individuals, but more true is it that "The Colonel's lady and Judy O'Grady are sisters under the skin." Anyone in whom any of the three instincts is seriously lacking can justly be characterized as abnormal, or as we technically and more circumspectly say, is a "deviate." Any larger group in which such lack occurs is a group, I think, on the way to extinction.

As to the first mentioned instinct, the egoistic, little need be said. They are in the forefront of our consciousness and, indeed, are honestly believed by many people who ought to know better to constitute our only truly fundamental trends. We hear that man was conceived in sin and born in iniquity, that by nature we are wholly selfish and egoistic. By inference any attributes beyond the primitive egoistic group are artificially acquired. No more unwarranted assumption could be made. Any of which this were true would long since have perished from the earth. Either the individuals in such a clan would have destroyed each other or the clan as a whole would have been wiped out by stronger invaders who had developed a capacity for cooperation. Indeed, historians could easily cite examples of peoples destroyed by self-indulgence and disregard of public welfare even within the period of recorded time.
Despite the fact that unbridled selfishness is socially ruinous, it is, I believe, the part of biological wisdom upon the part of the individual to plan definitely for a reasonable and intelligent gratification of personal wants. Sanitariums and insane asylums are full of people who are victims of so-called complexes, of psychological conflicts, often due to thwarting the fundamental egoistic part of their nature. If you do me the honor to consider further what I have just said, however, do not overlook or forget the word, reasonable. Along with intelligent enjoyment must go restraint. Unbridled self-indulgence is biologically quite as
foolish as asceticism. Indeed, without going outside the egoistic group of instincts one can readily see the need for restraint and balance. Over-indulgence of the appetite for food leads to sluggishness and immediate incapacity for other forms of personal enjoyment, to say nothing of subsequent ill health and early death. Similarly, biologically speaking, no greater fool can be found than the libertine. While the sex urge is strong and necessarily must be predominant to insure the propagation of the race, the control of this impulse is quite as normal as is its indulgence. That phase of the reproductive instinct that is merely raw desire is compensated by a natural feeling of reticence which can be sacrificed only at an expense that no intelligently selfish man or woman would pay. A full knowledge of nature's ulterior purpose in creating the beauty of the rose does not preclude the realization that the rose to be enjoyed as such must be preserved as such. If used as an ingredient of a salad it is never a rose again. More adequately expressed, the fine emotions which center about the reproductive function can not be debauched and at the same time be retained as beautiful sources of future happiness. "Free love" is not only socially inexpedient but is biologically fatuous.

Many hours might be expended in further discussion of the meaning and the intelligent indulgence of these primitive egoistic desires. Shelter, adornment, means to amusement, and all these things, are important aids to happiness, and providence and
foresight in their acquirement are rightly regarded as manifestations of wisdom. The devotion of a life time, however, either to their acquisition or to their enjoyment is a mistake as profound as it is common. The penalty is exacted as certainly as the operation of the law of gravity.

There is an unwholesome element of simple greed among us today in the indulgence of desires that, in themselves, are perfectly proper and desirable. We gobble life as a glutton bolts his food. This is the age of time-saving devices, but how many of us use respectable judgment in the expenditure of the time saved? One is reminded of the automobilist going up from Jerusalem to Jericho who fell among salesmen. One induced him to try a new carburetor that would certainly save twenty percent of his gasoline. Another sold him a new style timer, another a lubricator, and a half dozen others their special appliances, each guaranteed to save at least twenty percent of the fuel. The end result was that he had to stop every few miles to empty his gasoline tank to keep it from overflowing and spoiling the carpet. What we need now is not more saving devices but sense enough to use the time we already have. The cult of consumption with its extravagant use of advertising to stimulate further our already over-stimulated desire for things is not the least of the social sins of modern business.

Let us now turn to the second group of instincts, those for constructive accomplishment. Here we meet a considerable amount of confused thinking. The instincts to which I
refer are those which lead us to do things for the love of doing, not those we do with inward protest merely for a wage. They lead the boy to spend hours of sweating toil in digging caves or building huts. They lead the engineer to the construction of bridges and sky scrapers. They lead to fine craftsmanship as distinguished from making things to sell. These instincts are so closely allied to the play instincts that both might be discussed together. Perhaps the most unfortunate violation of sound biology in the development of our present day industrial life is the constantly decreasing scope that is allowed for the constructive instincts. Time was when the workman was contented and happy if he could devote his life to the making of fine things for social use, when he could put his soul into his daily task. Given this opportunity and sufficient return for ordinary wholesome living the most difficult phase of the labor problem would vanish over night.

But perhaps some of you will say, "This does not concern us. We do not expect to be workmen." If any of you have adopted that theory you have built a barricade across your surest road to happiness. The problem of restoring a shattered life is one which is unfortunately all too often presented to the physician in this modern day of hectic striving. A number of my personal friends are skilfully devoting their lives to this difficult task. I have marveled to see some of the successes they have achieved. The first expedient that is utilized by such a skilful mender of broken lives to set his patient again upon the road to
happiness is to prevail upon him to find something which he recognizes as worth the doing and throw himself whole heartedly into the effort. If any of you are setting out with no other aim than to make a living let me urge, speaking solely as a biologist and in no sense as a preacher, that you reconsider. What is a curative for the wrecked life is doubly good for the life yet to be made. If you will be happy, first of all find something that you feel is worth the doing and put a generous share of your life into that. Let me assure you that nature has stacked the cards in your favor. The successful evolution of the human race has at all times depended upon getting things done. Nature as certainly rewards those who conform to her laws as she penalizes those who digress.

By your very presence here today you have in effect declared your intention of doing something worthwhile, which is another way of saying, of being something worthwhile. It is strictly and only in the confidence that such is your intention that the State of Ohio has invested hundreds of dollars in each of you. Quite aside from ethical considerations, you will make a fundamental error if you fail to carry out your implied promise. Do not loose your golden opportunity for happiness by thwarting your own constructive instincts. Do not loose the joy of good work well done for any other reward whatsoever.

If you are going into business as an opportunity for service, for constructive work of social value, your course is biologically sound. If you are merely bowing in worship of the belly Gods you are defeated in advance. You may gain the whole world but you will certainly loose your own soul.
II.

Are you going into journalism? You are accepting a tremendous responsibility. As a teacher I look at you with envy. You will reach a thousand where I can reach one. Are you merely going to make a shoddy product that will sell? Are you going to cater to the frivolous and the insincere? Are you going to direct your attention primarily to the biological scum of the earth? If so, you have accepted prostitution as your lot. I have scant patience with the theory that the journalist must follow his public, must give them "what they want." His is a great opportunity to lead, to teach; and he does lead, upward or downward, and he does teach, good or evil, whether he will or no. By no sophistry can he be justified in fostering quack science, quack sociology, or quack theology. He owes to himself, to his profession and to his readers sufficient study to know the false from the true and sufficient skill to make the true and the worthwhile more attractive than the false or the frivolous. This is salesmanship at its best.

Have your instructors, I wonder, been wise enough to insure for you a reasonable opportunity to know the spirit of your times? Let me quote from a recent address of President Coolidge to the members of the American Association for the Advancement of Science: "You represent the interests, the forces and the endless activities which literally from day to day are conquering new domains and adding them to the imperial realm of human knowledge. The future of civilization is well nigh in your hands. You are the wonder workers of all the ages. The marvels of discovery and progress have become commonplaces, simply because their number has paralyzed the capacity of the mind for wonderment. Those of us who represent social organization and political institutions look upon you with a feeling that includes much of awe and something of fear, as we ask ourselves to what revolution you will next require us to adapt our scheme of human relations."
What are some of these accomplishments to which the President referred? Space has been almost annihilated; time divided by ten; death pushed back a decade. Do you know how or why this has been accomplished? It has been by no accident. It has not done itself. Do you know that at the present time the total number of men and women to whom this is due, who are devoting even a significant part of their lives to productive science throughout the world, would not make one city the size of Akron? Do you know that all the productive scientists in America could be comfortably housed—at least as comfortably as they are used to being—in the town of Mansfield, Ohio?

Are you as journalists prepared to do your part in the interpretation of modern science to your reading public? The man at the battle front has but scant time and often scant ability to send messages to the rear. It is your duty as well as your privilege to visit the battle front, to acquaint yourself with the maneuvers, and to report them honestly, intelligently and sympathetically to the people, your readers, whose welfare is in the balance. What happens on Wall Street or in Congress is of minor significance in comparison with what is happening in the research laboratories. American scientists have agreed to meet you half way, have organized an intelligence service especially to aid you in your task. Does that fact not place you under obligation to play fair?

It is unfortunately true that to most working scientists the advent of a reporter is looked upon as something akin to a visitation of the Devil. The fundamental principle to which the
investigator is devoting his life is to discover truth and as nearly as within him lies to place his bit in accurate perspective with the great body of existing knowledge. His instincts of decency are ravished when some youthful incompetent visits his laboratory and then under the plea of "human interest" introduces an element of distortion and unfortunately often even of plain mendacity, intended or otherwise, into the report which he sends abroad. I think it can safely be said that the two major forces in the determination of human welfare at the present time are the work of the scientist in recasting the world and of the journalist in directing human knowledge. It is my belief that sound craftsmanship in journalism now demands the same skill and honesty in dealing with the scientific world as with the financial world. A distorted report of a scientific discovery should be considered as disgraceful as a mendacious market report.

I can not refrain from a word to those of you who are going into public school teaching. Your task is as exacting and difficult as it is socially important. Sound craftsmanship on your part will demand much of devotion and of skill. That you will give more than society deserves I have no doubt. A few years ago it was true, and probably still is, that the public school teachers as a class received less stipend than the lowest grade of menial workers on the railroads. In a peculiar sense your reward will have to be the joy of noble work well done. You will be subjected to a demoralizing temptation incident to the presence of many intellectual incompetents among your pupils. If the
children are strikingly enough deficient they will be sent to institutes for the feeble-minded; if of slightly higher grade they will be sent to you. In the attempt to deal fairly and helpfully with these unfortunates and at the same time maintain decent standards of accomplishment, you will have my profound sympathy. There is an ever present danger that your more intelligent pupils will be allowed to degenerate into loafers and trifflers, that habits of intellectual shiftlessness begun in the grade schools will be continued and accentuated in the high schools and that a large proportion of those who ultimately reach the colleges will continue to be, as many are now, a disgrace to themselves and to the schools from which they come.

Time does not serve to consider in detail the application of the criterion of sound craftsmanship to other walks of life into which others of you are directing your steps. In each case, however, the same principle applies: one of the finest joys of life comes from the realization of good work well done.

Let us turn now to the third group of dominant instincts, those which have their roots in concern for group welfare. These instincts are primitive and quite as deeply ingrained as are the instincts for the securing of food or propagation of the species. In their primitive form they are, of course, elemental. Do you doubt their genuine existence? If so, watch the reactions of the spectators the next time you see an accident happen on the street, or better still note your
The first impulse that will spring into consciousness will be to do something helpful for the victim. Occasionally we see this impulse in unmistakable form in our beginning classes in physiology. One of the standard phenomena in our beginning classes is the fainting of one or two girls a year. The girls naturally soon recover—they merely have to regain a bit of vasomotor tone—but for the moment the demonstration that served to set off the fainting fit gets but scant attention. The primitive instinct to do something for the prostrate girl overshadows all other interests. Let us recognize, then, that the altruistic instinct in its primitive form is quite as much a part of our heritage from the jungle as is any other instinct whatsoever. When the professional moralist assumes that by his words, however eloquent, he creates morality the biologist can but smile. That much can be done in the stimulation of the altruistic instincts is, of course, true, but if they were not inherent in the individual the moralist would be but a voice crying in the wilderness.

Like all other instincts, the altruistic carries its own feeling tone. Very fortunately for the race, this feeling tone is enjoyable to the individual. One of the most amusing manifestations of biology which is as old, no doubt, as the race itself, is the shallow naivete of the up-to-the-minute sophisticates who has recently become emancipated from "all that sentimental rot." "Be natural," he says. "Live the full life; be honest; be the pagan that you are." The biologist certainly
has no quarrel with naturalness, honesty, or even clear-eyed paganism. As a biologist, however, I object to the elimination from the biological equation of one of its most important constants.

It is quite true that the altruistic instincts are often in conflict with the egoistic. It is correlatively true that the immediate aggrandizement of the individual may come in conflict with the welfare of the group. As to the outcome when the conflict becomes irreconcilable the fields of Flanders bear mute witness. For most of us, however, the last grim choice usually does not have to be made. Nature mostly preserves the individual as well as the race—as necessarily must be so since the race is but the sum total of the individuals. The important fact for our thesis is that nature not only demands self-sacrifice upon occasion but also that she compensates for it and that the cultivation of the altruistic trend is a genuine means to happiness.

This instinct for group welfare can be given scope in a wide variety of ways. The most productive way of utilizing it for immediate returns is through the maintenance of friendly human relationships, simple neighborliness, human kindness. In a great variety of situations the most enlightened form of selfishness is, paradoxically, unselfishness. Loving your neighbor as yourself is quite as sound biology as it is theology. If one remains sufficiently shallow in his thinking he may deny
this fact; he may go through life under the delusion that he can, in his puny self, thwart the fundamental laws of nature. He can, if willing to pay the price, as an individual be unnatural. He can starve himself to death; he can persist, for a time at least, without clothing or shelter. But unless he is abnormal to the point of insanity he can not buy satisfaction in this way. Neither can he deny expression to his instincts for group welfare without paying. Nature in this is as inexorable as in any other manifestation of her law of survival of the fit. As a simple, elementary fact, it pays to be kind, to be friendly, to be neighborly. Nature demands it; nature rewards it. Needless to say, I am referring only to honest kindness, not posing adopted as protective coloration for social or business purposes.

The problem as regards immediate personal relations is relatively simple. But what of the larger neighborliness? Here we meet a problem that many addresses much as this could not adequately cover. These demand clear insight and honest thinking. I can best allude in passing to but one in which the biologist is especially interested and upon which it is his duty to speak plainly.

What about a neighborly spirit toward the generations unborn? We are much concerned, just now, in America regarding the fitness of foreign immigrants to our shores. We should be even more interested in what Wiggam calls the little immigrants from Heaven. Nature in her larger kindness has heretofore dealt with this problem simply and directly. The fit she has preserved
the unfit she has calmly killed. Man has taken the responsibili-
ity of trying to tie her hands. He has largely abolished famines, 
rousing beasts, and pestilences. He is now trying to abolish 
other effective eliminant of the unfit. namely alcohol. He even 
spends largely of his means for special institutions for the 
preservation of the unfit. These things are a fine manifestation 
of human friendliness, but they are not enough. Sound biology 
demands that man extend his friendliness to the generations yet 
to come, that he assume the further responsibility of forestalling 
the propagation of the unfit.

It has been shown sufficiently often how a single un-
fortunate mating can lead to a line of defectives—to the propa-
gation of idiots, epileptics, prostitutes and vagrants to the 
number of hundreds. This is the inevitable outcome when any suf-
ciently unfit man and woman are allowed to propagate. Who of 
us would set at large a victim of small pox to hand on his mis-
fortune to his neighbor? Yet hereditary defectiveness is even 
more "catching" than small pox. The man on the street has several 
means of defense; the babe has none. To refuse to face this fact, 
in the light of present day evidence, is more than weak senti-
mentalism; it is positively wrong. I can conceive of no greater 
cruelty than to inflict not only upon society, but upon the very 
victims themselves, existence that means epilepsy or prostitution. 
It is a grim fact that the human scrougs are out-breeding the 
select stock. Any farmer knows what such breeding means in his 
herds. It means degeneration of the whole group. It means
precisely the same in the human stock.

It should be more widely known that the propagation of the unfit can be stopped with relative ease. By the use of x-rays the human being can be sterilized not only without pain or mutilation but even without the least discomfort. Indeed, the male subject, if not informed of the treatment, would be quite unaware of it through any bodily
or psychical change in himself. He would merely cease to be fertile. We have reached the place where man must either stop the breeding of the unfit or ultimately accept nature's own corrective. If let alone, the increasing degeneracy and stupidity will go on to the point when the race will be unable to cope with the vicissitudes of life and again the process of killing the unfit will inexorably be resumed and the stream of heredity again be slowly purified.

Please do not read into what I have said a note of pessimism. I do not believe that we are going back to the jungle. We have the inestimable advantage over all men who have gone before of having adequately tested the saying: "Seek and ye shall find; knock and it shall be opened unto you." I am by no means convinced that much of our so-called advancement of recent years is immediately profitable. I know of no family whose happiness seems greatly accentuated by radio or rapid transit. We have yet to get used to these things and put them in their proper place. What science has done that seems to me of enormous value, however, is to have proved that truth works. Science, after all, is but illuminated common sense. The spirit of science is to face all the facts with an open mind, without fear or favor, and to follow truth to any goal whatsoever. I think the lesson will not be lost. I think that we shall ultimately come to social science in fact as well as in name and that humanity will finally be brave enough and wise enough to follow truth and find wisdom and happiness at the same goal.
To the members of the graduating class I extend the
best of good wishes in the life before you. I will not say the
larger life,—it may be larger, it may be smaller as you shall
choose. You are going forth to make your place in a world that
needs all you can bring it of wisdom and honesty, that will
welcome you in proportion as you can and will offer good work
well done. You have been selected from many and given oppor-
tunities such as they have not and will not have. The world is
facing momentous social and economic problems. Wise leadership
is needed. By the very fact of your graduation from this
University, you are called to ultimate leadership. To the
citizens of Ohio we of the University send you forth as fruits
of the trust that has been laid upon us. Your success is our
success. We wish you godspeed.