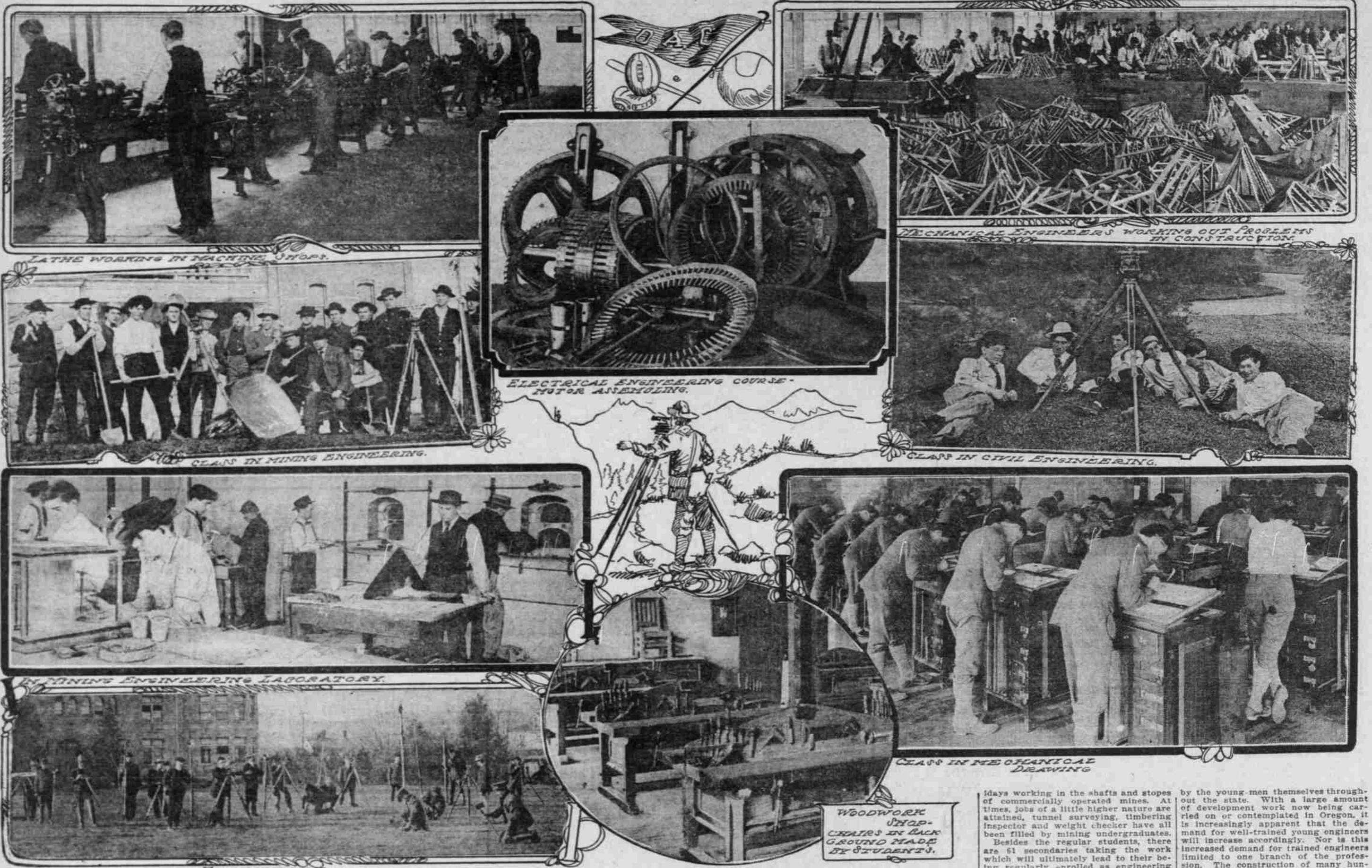


# PRACTICAL TRAINING OF ENGINEERS IS AIM AT O. A. C.

Big Percentage of Students Pass Summer Vacations in Working in Mines or for Power Companies—Classroom Studies Devote Part of Courses to Non-Technical Branches.



**OREGON AGRICULTURAL COLLEGE, Corvallis, Jan. 6.**—(Special.)—It isn't only within the confines of the college that the engineering students at Oregon Agricultural College get their training. Each Summer sees a general exodus of the engineers to work in different parts of the country. Last Summer a party of the mining engineers, who had one more year to get their degrees, took the steamer from Seattle as soon as school closed and spent the Summer in Alaska exploring the gold fields near the Arctic Circle and learning the methods of mining and handling the products of mines in the practical work which they did while on the trip.

This type of trip is not undertaken for pleasure, but is in the nature of preparation for the work which will come after the schooldays are over.

**Many Earn Education.**

Many of the young men in the different branches of engineering are working their way through college, and it is necessary for them not only to earn their own livelihood during the vacation, but also to set aside enough to allow them to carry on their work

during the winter. For although it is possible for the student to help support himself during the college year, still the demands of his classroom work are so pressing that it is only by sacrificing some essential part of the college training or opportunity that he is able to accomplish much work to help support himself.

There are four divisions of the engineering school—the civil engineering department, the electrical engineering department, the mechanical engineering department and the mining engineering department. For the first two years after the engineer-to-be enters the college he will follow the same paths of learning as all the other engineers, and it is not until he becomes a senior that he will be possible to tell from his course of study in which of the professions he will finally be graduated.

**Special Work Comes Late.**

In these first two years the neophytes are given courses in English, mathematics, calculus, shop work, chemistry, physics and modern language. From the beginning of the junior year on the student specializes in the work of his chosen profession.

There are 71 regular students enrolled in the Civil Engineering department this year. These men are given

shop work of the most practical kind, which trains them not only in the ability to know and pick out the proper tools for the work in hand, but also teaches them exactly how to use these tools. Practical courses in blacksmithing, woodwork, foundry practice and machine-shop practice turns these men out with the ability to successfully wrestle with the problem of their calling. Work in surveying and the use of instruments is given to the men and there are enough railroad surveys radiating from the college campus in every direction to make Corvallis the chief railroad center in the world—if all the lines were built.

**Students Repair Plant.**

The electrical engineering department has an enrollment this year of 70, being the second largest department in the engineering schools. Much of the upper class work in this department consists of laboratory practice and instruction during which the students become thoroughly familiar with the different types of machines. A large part of the upkeep of the college lighting system is carried on by the students. At the present time individual motors are being installed on some of the machines in the woodworking shop and all the installation as well as the

original designs is being done by the department. Many of the students when they get their bachelor's degrees enter the employ of the General Electric Company or the Westinghouse Electric and Manufacturing Company at Schenectady or at Pittsburgh, where they become student apprentices in the shops of these companies and in due course of time graduate into the engineering force. During the Summer these students get their positions in every different part of electrical job, partly for the money which they can earn, but largely for the experience which they get.

Look closely at any gang of linemen stringing the transmission wires from one end of the state to the other during the Summer months and you are pretty sure to see some Oregon Agricultural College electrical undergraduates with a safety belt around him doing as much work as any other man on the job and learning not only how to string wires, but how to handle men as well.

A good mechanical engineer nowadays must have a pretty good knowledge of all the different branches of engineering in order that he can use the methods and appliances of the civil engineer and the electrical engineer,

but that also he is able to help these two to carry out their purpose. The railway system, without bridges or union depots, would be very different from what the railroad system is today, and the electrical power plant, stripped of the benefit which it has derived from the mechanical engineer, would be far less efficient than the present-day central station. There are 56 students in the mechanical engineering course at the Oregon Agricultural College.

**Practical Branches Taught.**

The interest in mining engineering is increasing very rapidly and a corresponding increase both in the numbers and in the equipment is noticed in the Oregon Agricultural College mining department. This year there are 29 students taking mining engineering. Men, upon completing this course, are able to do assay work, and all branches of practical mining knowledge have been covered. During the Summer months the students in this branch of engineering work spend their time in getting the actual experience of mining conditions. This is done by many of them entering the employ of mining companies and spend their hol-

days working in the shafts and stopes of commercially operated mines. At times, jobs of a little higher nature are attained, tunnel surveying, timbering, inspection and weight checker have all been filled by mining undergraduates.

Besides the regular students, there are 61 secondaries taking the work which will ultimately lead to their being regularly enrolled as engineering students. These boys are given the elementary work with the other secondary students, but their interest in the engineering pursuit is kept up by giving them shop work and elementary mechanics. There are four graduates enrolled in the school this year taking work which will ultimately lead to their engineering degree. The college grants a B. S. degree at the end of the four years' satisfactory work, but in order to get the engineering degree it is necessary for the students to take one course of graduate work at the college and to do one year of practical office engineering work as an authority. Upon completion of this work the student is entitled to an engineering degree.

**Large Increase Marked.**

There are 29 members in the engineering school faculty, and besides this number the engineering students have instruction under the teachers in the outside departments, such as chemistry, physics, mathematics, English, public speaking, etc.

Increase in per cent this year of the present freshman class over any previous class has been 24 per cent. This indicates a new interest which is being taken in engineering education

by the young men themselves throughout the state. With a large amount of development work now being carried on or contemplated in Oregon, it is increasingly apparent that the demand for well-trained young engineers will increase accordingly. Nor is this increased demand for trained engineers limited to one branch of the profession. The construction of many hundreds of miles of railroads in this state within the next three years will require hundreds of young civil and mechanical engineers.

**Many Engineers Needed.**

The development of the country with the rapidly increasing population, the building of towns and cities and the general requirements of electricity, all make it certain that there will be plenty of work for the young engineer to take up when he is through with his preparatory training. There is a constantly increasing interest in mining throughout this state and neighboring states. Not only are the precious metals sought after, but also coal and lime and clay and various sorts of building material. These are being dug out of the ground as fast as men and money become available.

The record of the O. A. C. Engineering School has been good from the first. Its graduates have had no difficulty in getting employment, and once having gotten it have rapidly shown themselves to be worthy of professional position. With the completion of the new mining building, for which contracts shortly will be let, the whole engineering school will be in the best possible position to graduate thoroughly instructed young engineers.

# PORTLAND PASTOR'S SERMON TELLS HOW CREATOR HAS HELPED MANKIND

Taking Ebenezer as Text, Appeal Is Made to Give Return for Benefits Showered by Leading Christian Lives.

**BY WALTER BENWELL HINSON.**

AND Samuel took a stone and called the name of it Ebenezer, saying, 'Hitherto the Lord hath helped us.'—Samuel I, vii: 12.

First of all in that text, notice the acknowledgment that we have been helped by God. We have been helped. There is no possible contradiction concerning that. There have come into our lives such adjustments; such unexpected opportunities; such supplies of wisdom, strength, forbearance and fortitude, that we knew we were being helped. And we knew we were being helped by someone. Chances did not account for it; coincidence was the wrong word to be used as explanation of the help we received; there was such manifest intention to help us that we knew someone helped us.

Aye, and a wonderful someone, too. For we can look and see that ever since the world was made, everything was happening to bring us the reinforcements that we needed at some particular crisis. And there have been such marvellous providences manifest in our deliverance that whenever made them, if he was not God, was a very good substitute for God.

**All Have Been Helped.**

We know the name of the one who has helped us. We know our Moses who smote the Pharaoh of our souls' captivity; we know the Moses who divided the Red Sea waters of our despair; we know the Moses who went up Sinai's burning brow to bring to us the wonderful words of God; we know the Moses who smote the rock to give us the water of refreshing; we know the Moses who led us to the Elms where the cooling waters were; and we know the Moses who sweetened the bitter waters of many a March. We have been helped. And we have been

helped by one infinite in wisdom, power and love; and he who has so gloriously befriended us is named Jehovah.

It might be pardonable on this special day to talk of personal matters in public. I would be bold to say that sometimes when we faint, notice the Christian life looms gloomiest before me. I say, "My God, the miracle is that I am trying to live it at all." And sometimes when I look over a congregation and think I am going to endeavor by the grace of God to show these people some of the glories of Jesus Christ, I laugh in my heart to myself. "A foolish person has been working there, because a wise man before he builds sits down and thinks it over; and if he has not sufficient means, and strength, and wisdom to think the building he wisely desists from com-

menting it. And humbly venturing out on to thy condemnation, my Lord, out of thine own mouth will I judge thee! Thou hast commenced a building; thou hast continued the building; wilt thou become as an unwise builder, and be inadequate to complete the erection of the edifice? Friends, do you see the argument? Hitherto the Lord hath helped us; therefore he will continue to help us to the end.

This hath helped to ever need. The emboldens me to plead: Canst thou let me sink at last? Let me re-estate the argument: He has in times past forbidden me to think He'll leave me at last in trouble to sink; I have seen Ebenezer; I have in review condensed his good pleasure to help me quite through.

Ebenezer! To create is to love; and to love is to provide; and to provide is to keep; and to keep is to crown! Hitherto the Lord hath helped us, is an argument.

**Problems Are Told.**

I don't think the one who died for me is going to fail in his effort to get me to heaven. When I look up at the pierced hands of Jesus Christ, and recall how he went into the grave for my salvation, I cannot compel myself to think the day will ever come when he will say, "I have lost interest in you." And besides having given us Jesus Christ, did not God, with him, freely give us all things? We possess his promise.

He has said, "I will never leave thee, I will never forsake thee." Then I will be bold enough to say, if I get into danger he will go with me and safeguard me therein or bring me out; and if I go into darkness he will stay with me in my affliction; and if I go out to the "poor farm"—where many a better man has gone—he will go to the "poor farm" with me; and were I to walk the wards of an asylum he would walk them with me; and if I be his obedient, trusting child, should go

to hell he would go with me! Yes, I will be bold enough to take him at his word.

He says, "I will never leave thee." Then must he ever be with me. For am I not so related to him that he is of necessity bound to complete the work he commenced? He says he is my Saviour. Well, if he is my Saviour it follows that he must save me. He is my father. And I thought only last week, as I was walking down the street holding the hand of my child I thought if I suddenly saw some danger come this way how willingly would I sacrifice my life to save that of my boy. And God must be as good, must be infinitely better, than I am. For Jesus Christ said, "If ye being evil, know how to do good to your children, how much more shall your Father in heaven bless, and cheer, and safeguard you."

**Church Incident Related.**

I remember an old man in my former church standing up one night and in a voice that trembled with emotion he said, "I tell you God has had too much trouble with me to let me go." I held that to be true. If he meant to stay me, he would not have shown me the things that he has; nor said to me the things that he has; nor done for me the things that he has. Ebenezer. It is an argument.

And thirdly I see in the text an assurance. I don't know what tomorrow will bring to me. It may bring swift death; it may bring the continued activities of life. Nor do I care to know; for I am persuaded that the grace which brought me through yesterday, is sufficient for tomorrow. All I ask of the God of infinite resources is to do for me in the future as he has done for me in the past; and if I am satisfied. And even when I take that step out into what is darkness—so long as God stays. A great deal may happen this next year. It may not be the kind of a year the last

year was, the kind of year we would have to be. But who cares? We shall have the same Christ; the same mercy-seat; the same Bible; the same Holy Spirit; the same hope of heaven, and probably some of us shall have heaven itself before the year is out. So even death—of which so many are afraid—and that beyond of which we know nothing, so long as we have Jesus with us, so long as we have Jesus with us, sure it still will lead me on.

O'er moor and fen, o'er crag and torrent, till the night is done; And with the morn those angel faces smile, Which I have loved long since, and lost awhile.

Ebenezer—it is an assurance. And lastly, I see in the text an appeal. God has been so good to me, I must be good to God. That is what brought the tears to my eyes yesterday. A God who flings lightning at me, and maddens me with his shuddering thunders, has an inferior claim on me, to the God of Calvary. Father used to give me the strap as an admonition; but when one night I went in from a fight, and mother washed the cuts and bruises, and dropped her tears on them, I said, "I won't fight any more." If he has done all this for me, it is time I did something for him. And if he has so blessed us, my people, during this past year, what sort of persons ought we to be in living, loving loyalty? I have read how once when new colors were being presented to a regiment, as the banner was received, the whole line stepped forward and paused, and then lifting the hand, those men said, "Unwavering and in faith, wherever these sacred colors go, we'll follow to the death."

And I read this morning with more interest, I think, than ever before, how

Ruth, the youthful, looked up into the face of Naomi, the aged, and when the elder said to the younger, "Leave me, for your life is separate from mine," this young woman replied, "Whither thou goest I will go; where thou lodgest I will lodge, and where thou die I will die, and there will I be buried."

**Obedience Is Asked.**

O, there is an appeal in this, Ebenezer. And so I call on you this morning to ask the question, "What shall I render unto the Lord for all his benefits toward me?" Some of you ought to render your obedience. You have gone all these years without ever acknowledging the Christian name. You are among God's people here, and yet Jesus Christ looking down into the waters of baptism has not yet seen you there. He has said, "Suffer it to be so now, for thus it becometh us to fulfill all righteousness." And when you accepted him he turned and looked at you and said, "If ye love me, ye will keep my commandments." There is the baptism, what doth hinder you? I am speaking of the fact of baptism in this serious way, because I believe it is a command of Christ; and all of us ought to be subject to Jesus. O, friends, we must be Christ's in all things. Let us be Christian. Let our very thinking become transparent; our words sincere and without guile; and all our actions the deeds of the children of light. Jesus Christ said, "Let your eye be as the eye of a man, and your ear as the ear of a man, and your heart as the heart of a man, and you may get mixed up. So we must always be sincere and straightforward in all our talking, and in all our dealings. Let us be of the day, and not of the night. For everyone that loveth the truth cometh to the light. So let us learn to look at our lives as we shall when they are scanned by Jehovah, by angels, and by men.

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