

HENDERSON TALKS ABOUT RELATIVITY

University Professor Gives His Ideas on New Theory of Scientist.

By J. P. HUSKINS

Dr. Archibald Henderson, head of the Mathematics Department of the University of North Carolina and a member of the Royal Academy of Science, was told recently that he had a visitor; and on going down from his study to receive his caller, he found him quietly enjoying a game of marbles with the boys, little wondering whether those marbles rolled along on the carpet because of any particular warp in space, or whether any line was straight or any circle round.

"Do you want to talk to me?" asked Dr. Henderson.

"Yes, if you have the time," was the answer.

"Well, fire away, fire away!" "It's rather hard to fire when your gun's not loaded," confessed the caller, who had come to talk of Einstein and Relativity.

Both laughed, and the interview had started.

"Dr. Henderson, as you know, Einstein has announced a third theory in which he is reported to have said that there were only twelve men in the world capable of understanding: Are you one of the twelve?"

Dr. Henderson said something about being kidded and continued, "No, I'm not one of the twelve. Or if I am, I don't know it; for I have not yet received an exact copy of the theory. I have my own idea of what it deals with however."

"In what way does it differ from his former theories?" the questioner continued.

"In order to understand the meaning of the new theory, it's necessary to have a general knowledge of the former ones," the head of the mathematics department explained.

Here he plunged into an exposition of Einstein's Special and General Relativity theories. A summary follows: The Special Relativity theory deals primarily with motion of bodies in time and space. Only systems moving with uniform relative velocity are included. For example, Einstein showed in this theory that all phenomena of nature are the same for any two observers who move relative to one another rectilinearly, with a constant velocity. Gravitation is left out of account; and a fundamental place is given to the constancy of light velocity in empty space. The velocity of light in free space appears the same to all observers regardless of the relative motion of the source of light and the observer.

But this theory was not all-inclusive; it had taken no consideration of gravitation. Therefore Einstein set himself to the explanation of this phenomenon. So he formulated his General Relativity theory, explaining gravitation as a warp in space caused by an electro-magnetic field set up by the presence of matter which is in origin and structure electro-magnetic. Therefore space and matter are relative, and the nature of space is not fixed but is relative to matter. The geometry of any region is conditioned upon the nature of the gravitational field. Distance and duration, for this reason, must be estimated in relation to the observer.

"Now," continued Dr. Henderson, "Einstein's last theory deals, doubtlessly, with the nature and composition of light. There are two ideas concerning the composition and transmission of light. Some scientists are working with one and are getting results that seem to establish their position. Others are working with the other and are getting equally convincing results. Some scientists hold that light is a series of waves set up in ether. The other conception, the corpuscular theory, is that light travels in bundles. Einstein's latest work is an attempt to bridge over this gap in scientific reasoning by harmonizing these two theories."

"Dr. Henderson, since Einstein's explanation of gravitation eliminates the idea of one body's exerting an attraction for another body, do you believe there is any fixed framework of reference around which the whole universe revolves?"

"No. According to Einstein there can be no fixed frame-work of reference. If there were, then it would be impossible to establish the idea of absolute motion."

"Then do you agree with Sir Oliver Lodge in his attempt to establish aether as this fixed reference?"

"Lodge is very much like Archimedes, who said that if you would give him a lever long enough, he could turn the world over. But he didn't have any place to put his lever. Lodge's theory is all right, but he doesn't have any place to put it."

NORTH CAROLINA GRADS IN NEW YORK FORM CLUB

Men Working for General Electric in Schenectady Hold Interesting Meetings.

Graduates of North Carolina colleges now employed by the General Electric organization in Schenectady, N. Y., have organized a Tar Heel club which is having an active existence according to word brought here by Henry Wheeler, son of Dr. Alvin S. Wheeler and a recent University graduate, who is now with the General Electric Company in Schenectady.

M. L. Rockfield, State College alumnus, is president, H. G. Wheeler, graduate of the University, is vice-president, and S. W. Matthews, State College graduate, is secretary-treasurer.

The organization held a very enjoyable banquet last week to discuss plans for the year.

At this time it was decided to prepare a pamphlet with pictures and positions of all North Carolina men in the General Electric organization to show the opportunities for North Carolina men in the corporation, the pamphlets to be distributed among North Carolina institutions.

The banquet was followed by an interesting program showing the growth of photophone, the General Electric contribution to talking movies, from the germ of an idea to the present stage of development.

An interesting feature in this connection was the reproduction of the first sound ever recorded on a photographic film, by Mr. Hoxie in 1921. The original apparatus used in this recording was shown and its use demonstrated.

The possibilities of using photophone for commercial films and for entertainment films were described. As a final touch three short films were shown to show how much better the laboratory reproduction is than theatre reproduction.

T. J. McManis, assistant publicity manager for General Electric, has been largely instrumental in helping the Tar Heel grads organize.

To Issue Pamphlet On Holiday Courses

Word has been received at the Institute of International Education in New York that the League of Nations' Institute of Intellectual Cooperation will again publish a pamphlet giving full information concerning holiday courses which will be given in Europe next summer.

The pamphlet will contain information concerning where the courses will be held, subjects of instruction, fees, diplomas awarded, facilities for travel and residence, and the name of the person to whom inquiries may be addressed. It will contain programs of more than one hundred courses.

UNIVERSITY BAND GIVES EXCELLENT PROGRAM SUNDAY

(Continued from page one)

by R. M. Chamberlain and K. L. Kjellesvig. They were very good in their individual parts, but when joined in chorus by the band, the shrill notes of some dying piccolo tried to throw them out of harmony with each other. It is conceded that it is very difficult for two flutists to keep perfect time with each other

while playing a hard part of a number, but there were times in which the audience sensed that one of the players was off key, and yet could not distinguish who it was. The piccolo section came into prominence when the band rejoined the flutist, but not for any fame for there were many instances in which the piece threatened to be ruined by their being off pitch and grabbing notes before the director instructed them to.

The Londonderry Air (arranged by Lake) was next on the program and very beautiful. It was a sad sort of piece, one that kind of put you in a reminiscent mood; it was well played and the band came together in an excellent fashion while playing this selection. The trumpet section came in for more praise on this number, and this may be termed the best played selection in the first group.

The second group was opened by the Serenade Roccoco (by Meyer-Helmund). It was a very lively number and was well done. Charles White was again noticed in his playing in this selection. The last two notes were played by the bassoon,

furnishing a clever ending for the enjoyable piece.

Under the Spanish Flag, from the Cubanland Suite (by Sousa), came next. The clarinets were off key to a great extent. They furnished, however, a happy medium between the way the piece should have been played and the way the erratic piccolo was playing it. The whole brass section performed excellently during this number, but the beauty of the piece was spoiled by the noisy clarinets.

The last number, a fantasia, Nero, The Burning of Rome (by Colby) was wonderful. It was by far the

best on the program, and any other faults that the band had were certainly erased from the memory of the audience by the excellent way in which the band played this selection. It was the most difficult to play and by far the best played. Every section of the band did well on this selection. The piece, in itself a tonal story of the castle of Nero with its revelry bursting out into flames, was thoroughly enjoyed. The audience went home satisfied. The last number was worth paying a price of admission (although none was charged Sunday) to hear.

Advertise in the TAR HEEL.

FOR RENT

For Rent April 1st—Fraternity House near Post Office. See W. L. Tankersley, Room 12, Tankersley Building.

DR. J. P. JONES
Dentist
Over Welcome-In
Cafeteria
PHONE 5761

Notice to Seniors and Graduates

All Seniors and Graduates who expect to receive degrees in June come by Suttons Drug Store any time between 1:30 and 4:00 or 6:30 and 9:30 on Wednesday or Thursday of this week and see if we have your name on our list.

Also, all fourth year undergraduates and candidates for graduate degrees who DO NOT expect to graduate please come by and have your name checked off the list.

SENIOR INVITATION COMMITTEE

Those who have not ordered their Commencement Invitations may do so during the hours mentioned above.

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Write for details and admission requirements to Leroy M.S. Miner, Dean, Harvard University Dental School, Longwood Ave., Boston, Mass.

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Ipswich, S. D., Sept. 4, 1928

Larus & Brother Co., Richmond, Va. Gentlemen:

In answer to the challenge of J. J. Roberts of Columbia, S. D., as printed in the Minneapolis Journal dated Sunday, September 2nd, I have smoked Edgeworth for twenty-three (23) years and for two years previous to that time I smoked Qboid, which, I believe, is manufactured by your firm.

During this time I have smoked at least one can each day, and to verify this statement you may address the C & C Cafe of this city, where I make my tobacco purchases.

It may be interesting to know that my purchases of Edgeworth during this period have totaled more than 8395 (eight thousand three hundred ninety-five) cans, representing a total expenditure of more than \$1269 (twelve hundred fifty-nine dollars).

I have never smoked any other brand of tobacco but Edgeworth during the twenty-three years.

Yours very truly,
(Signed) Chas. Bostock
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The result was an achievement in airport lighting which has been pronounced the most nearly perfect of any in the United States.

The outstanding jobs go to organizations with the resources and facilities to handle them. Westinghouse, because of the outstanding opportunities which are of almost daily occurrence within its organization, offers strong attractions to young men of enterprise and ability who are anxious to make a mark in the world.

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