

ABROAD

NAME: Claytor, W(illiam) W(aldron) Schieffelin (Dr.)

ADDRESS: 622 South Ashley Street, Ann Arbor, Michigan

OCCUPATION: Post-doctoral student at the University of Michigan. (Assistant Professor of Mathematics, West Virginia State College)

PLAN: "I. The investigation of some general problems of topological imbedding. II. The study of some special linking properties of complexes lying in euclidean  $n$ -dimensional space."

NOTES: Born Virginia, 1908. Howard University, B.S., 1929, M.S., 1930; University of Pennsylvania, Ph.D., 1933; University of Michigan, 1936--.

PREVIOUS STUDY AND RESEARCH:

The major portion of my pre-doctoral training in mathematics was pursued with Professors Kline, Shohat, and Mitchell during my three-year attendance at the University of Pennsylvania. In association with the two latter named mathematicians, I obtained an extensive knowledge of the fundamentals of modern analysis, algebra, and group theory. As a student of Professor Kline, however, my studies in the foundations of point-set theory and analysis situs led directly to a consideration of various unsolved problems relating to the general structure of continuous curves. My resulting investigations culminated in a thesis publication setting forth a complete characterization of the peanian continua which are topologically contained in the surface of a sphere. Still further extensions and refinements of the work of my thesis have been incorporated in a second paper soon to appear.

I am spending the present year with Professor R.L. Wilder as a guest of the Mathematics Department of the University of Michigan. My program consists of seminar and research activity associated with the discipline of Unified Analysis Situs of which Dr. Wilder was one of the originators.

PUBLICATIONS:

- I. (Thesis) Topological Immersion of Peanian Continua in a Spherical Surface. Annals of Mathematics, Volume 35, Number 4, October, 1934.
- II. Peanian Continua not Imbeddable in a Spherical Surface. (This sequel to my thesis will soon appear in the Annals of Mathematics.)

REFERENCES:

DR. LEO ZIPPIN, New York University, Department of Mathematics:  
 "...He has the first and foremost character of a research scholar that his work is of such real and vital consequence to him that he has been glad to make sacrifices of salary and comfort to engage in it.

"...His thesis showed an excellent imaginative capacity, an ability to seize on the essential difficulty of a problem and to organize along fascinatingly clear lines a complicated chain of reasoning. It carried certain results much farther than the original workers in that field had dared to suppose that these might extend.

"The program of his first problem, carried out even in part, would tell us a great deal that we ought to know if we pretend to be acquainted with the ordinary euclidean plane. His second problem is one in which the solution of even very special cases would be most enlightening, and would have important bearing on the nature of the three-space we inhabit.

"Claytor's ability to contribute original ideas and worthy results to these problems, I cannot from my knowledge of him doubt.

"While quite free in his own thinking from those malicious 'complexes' which attend 'minority race' origins, he has not been able to escape the disadvantages attendant upon such extraction: he has not been able, for example, to become associated with those men in this country from which he could learn most. It is highly fitting, I personally feel, that the Guggenheim Foundation should recognize his ability and circumstance."

DR. SOLOMON LEFSCHETZ, Princeton University: "The project which the candidate proposes seems to be most interesting and the excellent paper which he wrote along closely related lines gives good guarantee that he may be able to accomplish something worth while on it. Dr. Claytor is probably the most capable negro mathematician in this country and has always been very highly esteemed by the mathematicians who know him personally or who know of his work and I strongly recommend his appointment to a Guggenheim Fellowship.

"Should he obtain one, it might be advisable for him to spend some time at the great topological school of Warsaw which he could do with considerable profit. Indeed, should he have any difficulty in regard to Moscow, Warsaw would be by all means the next place for him."

DR. R.L. WILDER, University of Michigan: "I have had the pleasure of reading Dr. Claytor's original work on imbedding problems, both in his thesis and in his unpublished manuscripts, and am at present engaging in personal discussion with him concerning possible methods of carrying out the plans which he describes in his 'Plans for Work'. I feel, therefore, that I may speak with some assurance regarding his capabilities and the value of his projects.

"I believe that Dr. Claytor is one of the most promising young men in his field today. He is not only a very capable investigator, but possesses a tenacity which enables him to pursue a research problem through whatever difficulties it presents. In addition, he has that creative faculty which is necessary to the discovery of those problems whose solution constitute the real development of a field.

"The plans for his proposed study represent, in my opinion, a most worthwhile project. I am aware that the duties of a teacher at the institution with which Dr. Claytor is professionally connected do not allow the leisure necessary for the proper carrying out of his program. During the present year he is on leave, paying out of his own (apparently meager) savings for the privilege of doing his research. It would be a pity if it were not possible for him to devote another year to his program, especially since I know of no one else so capable of carrying it out.

"Dr. Claytor is a very tactful and cooperative individual and would unquestionably be well received by, and derive great profit from association with Prof. Alexandroff and his colleagues. He is very amenable to advice, and has a

W.W. Schieffelin Claytor (3)

capacity for making friends. I believe his character to be excellent.

"In my judgment Dr. Claytor's application is greatly deserving of the consideration which your Committee will no doubt accord it."

DR. JOHN R. KLINE, University of Pennsylvania (Fellow): "Dr. W.S. Claytor took his doctor's degree at the University of Pennsylvania in June 1933. His dissertation was written under my direction. It is the best piece of original work that any candidate for this degree ever did for me. The problem that he attacked was one that a number of competent mathematicians had attempted to solve and had been able to handle only in partial special cases. Dr. Claytor developed an entirely new method of attack and completely solved the general problem. This is, I feel, a very unusual feat for a young doctorant and I believe indicates ability of a very high order.

"The problems which he wishes to investigate are difficult but are along the lines in which he has obtained such excellent results in his thesis. I believe he is fully competent to handle them and that their solution would materially further the field of Topology in Mathematics.

"He is a young man of pleasing personality. I feel that he is one who is destined to become an educational leader amongst his people and has a fine research future. I recommend him very highly and believe that he will do work of a very high grade on the problems he has outlined."



W. W. S. Claytor

PROFESSOR S. LEFSCHETZ, Princeton University: "I have just returned from the Christmas meeting of the American Mathematical Society held at Duke University. At this meeting in the session on Topology Dr. Claytor, who is a candidate for a Guggenheim Fellowship, presented a paper which turned out to be the best of the session. There was an ample discussion of his paper by a very interested audience and it was proved beyond question that Dr. Claytor is pursuing a noteworthy line of investigation with good chances of continued success in his chosen field....."

