> WIENER, NORBERT BIRKHOFF, GEORGE D.

VEBLEN, O.

Biograp hical

Morse Interview 6/21/56, p. 4, 6, 7

SCHOOL OF MATHEMATICS

ECONOMICS (p. 12) FELLOWSHIPS (pp. 13, 14, 16) ASSISTANTS (p. 11) PARTICIPATION IN ADMINISTRATION SEMINARS (pp. 15, 16) POLICIES (pp. 4, 17, 18) PRINCETON UNIVERSITY (pp. 6, 7, 12, 14, 16, 17) CALIFORNIA INSTITUTE OF TECHNOLOGY (p. 8) BUILDINGS AND GROUNDS (pp. 12, 15) TRUSTEES (p. 3) FLEXNER, A. (pp. 2, 13) BIRKHOFF, GEORGE (pp. 4, 5) WEYL, H. (pp. 6, 9, 10, 12, 14, 16, 17) GÖDEL, K. (pp. 9, 11, 14) EEFSCHETZ (p. 17) ALEXANDER (p. 17)

See Digest Veblen-Flexner Correspondence

VEBLEN - Biographical 1930-32

Academic Organization

Academic Personnel

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Facilities Corporation Biographical > BIRKHOFF, GEORGE D.

VEBLEN, O

GENERAL

POLICIES

1.0.1.20

For Birkhoff see Veblen, 0., 1930

Biography

Academic Personnel
Administration

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PRINCESON UNIVERSITY

Relations WOAT

HARVARD

MORSE, MARSTON

Biographical

VEBLEN, O.

EIRSTEIN, A.

DICESON

BIREHOFF

WEYL, HERMANN

Interview with Professor Morse, May 25, 1956%. Filed in Vertical File under Morse Interviews.

Interview with Morse, 5/25/56

BIRKHOFF, GEORGE D.

Biographical

SCHOOL OF MATHEMATICS

Academic Organization

Correspondence of Birkhoff with Flexner at the Institute. He was a mathematician at Harvard, and Flexner's first choice for appointment to the School of Mathematics. In September, 1938, he spoke publically, questioning the advisability of foreign mathematicians coming th the United States, and competing with American mathematicians. Flexner objected strenuously to his attitude.

There is also correspondence about Marston Morse.

BOHOL OF MATERNATICS

POLICIES

BIREHOFF, GEORGE

PLEINER, A.

Academic Organization

Administration

Biographical

Birkhoff to Flexner, March 17, 1931.

Pleamer has consulted him at Cambridge. He had sent him a copy of Bulletin No. 1. Birkhoff expressed himself deeply impressed.

Then he had been asked by Flexner for a rough memorandum explaining the way in which he would attack his own subject of mathematics if he had a free hand to do so. Somewhat loathe to do so, because Flexner has thought more about it, but their views seem to coincide.

He would suggest securing permanently one or two mathematicians of great and undisputed genius. They should be chosen for the importance of researches which they have under way, and only secondarily with reference to their

ability to work with other men. However, it would be unfortunate if such a man were not able to work in conjunction with younger men and to have some interest in them. "Themleaders should be taken wherever they were to be found."

The remainder of the staff would consist mainly of younger men giving promise of unusual talent to be taken only for a period of years, to be selected absolubly without regard to personality; salary to be sufficiently high, and duties so congenial that they could be obtained for a period of years without difficulty. "It would, however, be the normal expectation that they would go into the academic field after their period had expired." They might be retained after the limited years.

"No importance whatever would be attached to keeping a balanced department of mathematics, that is, one in which the various fields of mathematics and its implications should be evenly represented. There would, however, be a definite amagnes purpose to give equal

weight to pure and applied mathematics because of the increasing importance which mathematics is likely to have for all of science.

22 "If I were in your place, I think I should be inclined to make pure mathematics a very cornerstone of the Institute."

SCHOOL OF MATROMATICS

SHITH, DAVID BUGGE (FROM LONDON)

Diographical

Andient Original \$255.00

FIRENES, A.

BINKBOFF, G. D.

Smith to Abraham Flowner. He has seen Hadamard. Dirkhoff had just closed a series of lectures in Franch at the Sorbonne. When Smith said Birkhoff seemed to be mearest to a mathematical genius in America. Hadamard: "In the world." POLICIES

MATZERMATICS

Administration

Academic Activities

BOOMONIOS

BIRENOFF, OSBRGE D.

Biographical

Seorge D. Birkhoff to Flexner, Hovember 5, 1931. Copy.

"Combridge, Nov. 5, 1931

"Dear Doctor Flexner:

"It was a great privilege to see you and have such a good takk with you while you were in Cambridge. I enjoyed also your interesting lecture at the Old South Meeting House and your responses to the numerous questions from the audience. It was an audience of a kind I find appealing.

"Since I saw you I have been thinking more about your admirable report to the Board of the Institute for Advanced Study. Your report is a wonderful one which should be regarded

as a permanent statement of the ideals of the Institute.

"I will give you, however, my principal restions for what they are worth

## "(1) Subjects

Your selection of mathematics as a first subject is a very wise one, not only because it stands for pure intellectual endeavor of the highest type and plays an ever increasing role in the sciences, but also because the whole field of human thought should undergo 'mathematical clarification'. George Boole, the Irish mathematician and inventor of symbolic logic says in his book on the Mathematical Laws of Thought that he locked in pain through the philosophic work of Spinose, cast in almost geometric form, for a single syllogism! What are the various self-consistent points of view, the precise definitions, the underlying assumptions, and the purely logical consequences in various important social domains? I think it is important for the human race to find out. My forthooming book on Asothetic Heasure will represent one investigation of this general type.

"In your second subject of economics I think you have also made the best possible choice. He Shin the Chinese philosopher has pointed out that the material success of the West is really spiritual in many of its espects. Ferhaps he did this to counteract a rather prevalent Chinese view that Western civilisation is merely materialistic. He is clearly right to the extent that human welfare can be immeasurably improved in the Par Bast and this would make possible a development of the spirit not possible at present. But we know so little of economic law from a fundamental, impartial world point of view. Clearly the Institute can be of great service in the economic field."

## f(2) Persons

"The staff, especially the first staff, is fundamentally important for the Institute. The Institute must therefore secure men of the highest possible calibre, outstanding figures of their day. By so doing there will be set up a high and severe intellectual standard such as is obviously not to be found today in American Universities. I regard the setting of proper standards in this manner as sutremely important in this country.

"In order to get this initial staff it is obviously necessary to set your maximum selaries at a rather high level. I think much will depend upon the decision of the Institute in this direction. Not that the question of compensation is a fundamental one, once a certain satisfactory level has been reached, but rather that America has become and is likely to remain a country in which the status of the scholar and of scholarship is deeply bound up with the reward which is given him. At Harvard today the regular maximum salary is \$12,000 and is likely to go to \$15,000 in a few years. The University of Chicago has already gone beyond this latter amount (at least in offers) in special cases.

"The working conditions at the Institute will of course be ideal from the outset, and this fact will weigh very heavily with the kind of man you want to get.

## "(3) Locations

From our talk together I know that you are considering Frinceton and Washington as possible locations. I think that

Princetoris perhaps better, primarily because of the remarkable mathematical center there and the fact that Princeton is on the up-grade among American Universities. As a physical site and in geographical location, it would be hard to improve upon Princeton.

"Cambridge also has points to consider, as an intellectual center of first order, not too large for a reasonable quiet in living.

"However I come back finally to Princeton as the possible future location of the highest centers of learning and research, near to New York. The Frinceton mathematical group will ecoperate strongly with yours. That is also an important item.

"I em looking forward with much interest to seeing Professor Mitrany in a few days.

"With kindest pemembrances,

/s/ George D. Birkhoff

Academic Organisation

Administration

Biography

ECONOMICS

MATHEMATICS

POLICY

/BIRKHOFF, GEO. D.

See letter on proposed Institute

Birkhoff to Flexmer - 11/5/31

Vol. 1, Appendix to minutes of 4/11/32 (first set of minutes in Vol. 1)

BIRKHOFF, GEORGE D.

Biography

H.S. ECONOMIC

Academic Organization

"Hashih, Chinese philosopher, has pointed out that the material success of the West is really spiritual in many of its aspects...clearly right to the extent human welfare can be immeasurably improved in the Far East and this would make possible a development of the spirit not possible at present. But we know so little of economic law from a fundamental, impartial world point of view. Clearly the Institute can be of great service in the economic field."

From excerpts from a letter to A. Flexner from George D. Birkhoff of Cambridge Vol. 1, Minutes 11/5/31

BIRKHOFF, GEORGE D.

BIOGRAPHICAL

DODDS, HAROLD

VEBLEN, 0.

ALEXANDER

VON NEUMAN N

Mrs. Birkhoff on George D. Birkhoff's acceptance and reversal.

See statement it took Veblen's raid to bring Dodds to his senses.

Interview with Marston Morse, 6/21/56

1932

2/13

POUNDERS

Corporation

BINSTEIN, A.

Blographical

BIEKEOFF,

Flexner to Camberger, February 13, 1932.

He has visited Bamberger and Mrs. Fuld, apparently, in Phoenix, andhas just returned.

"Yesterday at luncheon, I saw Nr. Leidesdorf and Mr. Mass and told them the substance of what I had told you and Mrs. Fuld regarding my conferences at Pasadena. They were both quite thrilled at the possibilities, but of course we cannot count any 'unhatched chickens.'

"I shall, in a cautious way, open negotiations with Birkhoff and Weyl and shall endeavor to keep in touch with Professor Binstein, but I shall keep within the financial limits which we mentioned in our conference.

"I had written my brother Simon, whose judgment I very greatly value, regarding my talk with Professor Einstein and I was very happy indeed to find on my deak on my return the following note from him:

" \*Pear Aber

'I was sent the other day an abstract from one of your letters in which you report a remarkable talk with Minstein and his interest in your Institute. It would be a great triumph to attach him to it. He would bring it very great atrength. I do hope that the possibility is realized. You will be congratulated. Then for him it will be most valuable, assuring him a security which in the disturbed state of Germany he can hardly have.

\*Do let me see you very soon after your return.

Love,

'Simon'

"I know that you and Mrs. Fuld will rejoice at his approval and I do hope that it may be possible to perfect an arrangement wik which will enable us to give Minstein the opportunity which, in my opinion, he cannot now enjoy either in Germany or at Pasadena."

Earlier in the file (December 8, 1930) Flexner infarms writes Samberger Senciosing Professor Einstein's reply. I imagine that he has already made some arrangement for his brief stay, but in any event you and Mrs. Fuld did a most gracious act in a most modest and beautiful way."

D. Bemberger, Louis, 1930-1936

SCHO L OF MATERMATICS

BIRRHOFF, USORGE D.

PLEXNER. A.

Academic Personnel Academic Organisation Biographical

After correspondences with Birkhoff over a full year, and subject to authorization by Trustees, Pleaner offered Birkhoff professorship of mathematics at \$20,000 per annum, retiring age at 65, 10 per cent to be added to Birkhoff's TIAA accumulations, retirement pension to be \$8,000 per annum with IAS making up deficiency, pension of surviving widow at \$5,000, teaching basis full time, that is, no outside activity for a financial return, select own students, appointment to begin 10/1/32. Invitation is to round out personnel by about 2 more appointments to be selected (not by Birkhoff) with same high standard.

Birkhoff talked to Bichardson, the Chairman of his department, and President Lowell. He accepted the position on March 20, and changed his mind and renounced it on March 28, 1932. On March 10 Pleaner committed Leidendorf to ask Trustees for full sabstical year at full pay.

1932

FOUNDERS

BIRKHOFF, GEORGE

Corporation Biographical

FLEXNER, A.

MAASS, HERBERT H.

LEIDESDORF, S. D.

Flexner to beidesdorf, March 1, 1932.

Recounts a conversation with Birkhoff who came down from Harvard, "And, following out the understanding I had with you, I told him that I was disposed to recommend his appointment at the April meeting of the Board as a professor of mathematics. I wish very much that you and Mrs. Fuld could have been present at the interview. His enthusiasm and interest were beautiful to witness, and he has since written me that if we carry out our plan as we have outlined it to him, it will mark another new era in higher education in this country. I have made him no promises, but

I am perfectly sure that on the terms which we discussed he will accept, and this will be a great 'feather in our cap', for it means such that a man of the highest standing should be willing to give up a privileged position in Harvard University in order to east in his let with us. Before and after talking with Professor Birkhoff I conferred with Nr. Mass and Mr. Leidesdorf, and they theroughly approve all that you and Mrs. Fuld and I agreed upon and all that I have done."

D, Bamberger, Louis, 1930-1936

SCHOOL OF MATHEMATICS

BIRKHOFF, GEORGE

Academic Organization Biographical

FLEXNER, A.

Flexner to Keppel, February 4, 1937.

Birkhoff wrote an elaborate paper which he finished "two or three weeks ago," and before taking to publish it, he brought it down to Princeton and read it to the assembled mathematical group for criticism and discussion which occurred over two days' period. He went back to re-write it.

Flexmer also tells Reppel Sir Otto Niemeyer, Head-es Economics and Statistics is arranging a meeting of the head of Economics and Statistics Section to study with Riefler three months.

On February 3, 1987, Keppel informs Flexner the Executive Committee has appropriated \$6,000 for Wade-Gery. There seems to be no D File, Carnegie Corporation, 1932-1939 further reference in file to the request for \$25,000 for each of 3 years.

1938

a salah

September

BIRKHOFF, GEORGE D.

SCHOOL OF MATHEMATICS

Academic Organization

Birkhoff spoke publically questioning the advisability of foreign mathematicians coming to the United States of America and competing with American mathematicians. Flexner objected.

COMMONWEALTH FUED

Foundations

PLEERE, A.

BEED, EDWARD B.

BIRKHOFF

Letter from Flexner to Reed, September 12, 1938kak thanking him for the volume Reed cont him on the Commonwealth Fund Fellows.

Filed in Chronological File under 1938, 9/12.

Source Unknown

EMIGRES

BIEKHOFF, GEORGE D.

Academic Personnel

Biographical

FIRRMER, A.

Flexner to Birkhoff, September 12, 1938.

He has read in the New York Times of a statement made by Birkhoff in an address, "raising serious objection to the immigration of foreign mathematicians to this country on the ground that american mathematicians are thus kept out of positions." On the assumption that the quote is correct, Flexner takes issue with Birkhoff. He says there is no limit to the need of modern mathematicians in this country to teach in universities, colleges, and high schools. Is it better to train our young people by first-rate foreigners than by second or third-rate Americans? He adverts to the Institute in his argument. Was it wise to bring Einstein, Weyl and von Neumann? Does

Birkhark Birkhoff know of any Americans who are kept out of positions by the choice of these men?

Birkhoff's son is assistant professor at Harvard, but the Institute is making a grant toward his expenses to so that he may spend a year here. Should the Institute do so in order that we might help persons inferior to them who happen to be Americans out of a position? Men have been brought to the Institute and to American universities because they are excellent mathematicians. "Despite the number of foreigners who have come to "merica, the American of equal ability invariably gets the preference.

"In this era of hate and prejudice it comes to me of the utmost importance that no American should utter any opinion calculated to fan an anti-foreign feeling. On the contrary, though I should have been happier if there had been no Hitler or Mussolini, I confess I am delighted as an American that we have profited so largely by the folly of these fanatics."

Birkhoff to Flexner, September 15, 1938.

Birkhoff has written the article and sent it from Europe. He did not read the part of the address as described to him in the New York papers, but refered the reported to an advanced copy of the address as it appeared in Volume II of the Semi-Contennial publications, and that The statement to which Flexner objects follows: (From Fifty Years of American Mathematics by G. D. Birkhoff):

"The second special group to which I wish to refer is made up of mathematicians who have come here from Europe in the last twenty years, largely on account of various adverse conditions. This influx has recently been large and we have gained very much by it. Nearly all of the newcomers have been men of high ability, and some of them would have been justly reckoned as among the greatest mathematicians of Europe. A partial list of such men is indeed impressive: Emil Artin, Solomon Bochner, Richard Courant, T. H. Gronwall, Einar Hille, E. R. van Kampen, Solomon Lefschetz, Hans Levy, Karl Menger, John von Neumann, Oystein Ore, H. A. Rademacher, Tibor Rado, J. A. Shohat, D. J. Struik,

Otto Szász, Gabor Szegő, J. D. Tamarkin, J. V. Uspensky, Hermann Weyl, A. N. Whitehead, Aurel Wintner, Oscar Zariski.

"With this eminent group among us, there inevitably arises a sense of increased duty toward our own promising younger American mathematicians. In fact most of the newcomers hold research positions, sometimes with modest stipend, but nevertheless with ample apportunity for their own investigations, and not burdened with the usual heavy round of teaching duties. In this way the number of similar positions available for young American mathematicians is certain to be lessened, with the attendant probability that some of them will be forced to become 'hewers of wood and drawers of water.' I believe we have reached a point of saturation, where we must definitely avoid this danger.

"It should be added, however, that the very situation just alluded to has accentuated a factor which has been working to the advantage of our general mathematical situation. Far-seeing university and college presidents, desirous of improving the intellectual status of the institutions which they serve, conclude that a highly practical thing to do is

to strengthen their mathematical staffs. For, in doing so, no extraordinary laboratory or library expenses are incurred; furthermore the subject of mathematics is in a state of continual creative growth, ever more important to engineer, scientist, and philosopher alike; and excellent mathematicians from here and abroad are within financial reach."

Plexner responds more in sorrow than in anger, September 30, 1938, by taking an uncompremising view of the illimitable need for good mathematicians. He does not believe for an instant that we are at the point of saturation, and he makes a very convincing argument.

11/2

1938

MATHEMATICS

Academic Activities

BIRKHOFF, GEORGE D.

Biographical

Named 30 centers of mathematicals tudy in Mx U.S. all comparable in sense "that the most significant mathematical contributions may happen to come from any of them." (P. 19) Suggests could well be doubled. 4 south-Rice Inst., Duke U., Texas and Virginia.

Address to So. University Conference Durham N. C., I-12

SCHOOL OF MATHEMATICS

Academie Organization

BIRKHOFF, GOERGE D.

Biographical

Prof. Birkhoff commenting on the study of mathematics in the U.S. said: on visit to Institute:

"You have it in ham your power here to lift the whole level of mathematical studies in the United States, and if the funds which you are spending on the subject of mathematics are thus enabled to make this \$6,000,000 expenditure more effective, your comparatively modest expenditure will yield a rich dreturn to the entire American educational system."

Tr. Min. - 5/13/40 - Appenidx 2- pp. 3

/BIRKHOFF, GEORGE D.

Biographical

WEYL, HERMANN

Weyl to Prof. Julian L. Coolidge, Cambridge, Mass.:

"Birkhoff's sudden departure came as a great shock to all the mathematicians in this country, and to us his many friends. I have the profoundest admiration for his mathematical work, but I am afraid physics was Birkhoff's Achilles' heel. It seems to me he never fully grasped to what extent physics, through the enormous strides sixinterpress takks wise taken during the las t forty odd years, has moved away from all possibility of interpretation in terms of classical mechanics. It is humanly understandable that a man whose greatest achievements were in the field of dynamics should cling to such classical and hydrodynamical conceptions as that of a perfect fluid in the construction of atomic models. But what would have been a reasonable approach at the time of Lord Melvin, has long ceased to be so. I believe that the decisions of history on such questions are decisive, inexorable and irreversible. Birkhoff's recent theory of gravitation has a certain appeal by its closeness to familiar classical schemes, and therefore it is comparatively easy to work out its mathematical consequences. But as far as I can see, there is no reason whatsoever for the belief that it affords an adequate description of the phenomenon of gravitation. Thus I cannot help feeling dthat the less said about it the better. I know that this opinion is shared by the other men here in the Institute --Veblen, von Neumann, Einstein, Wolfgang Pauli -- who are in one way or other experts in

## relativity theory.

"But maybe 2 I am the last person you should have asked. It so happened, unfortunately, that during the last weeks I was engaged in a controversy with Birkhoff on these very same problems. I am sending you under separate cover two reprints which may indicate to you to what extent I am prejudiced:

"In my view it hardly detracts from Birkhoff's greatness as a mathematician that he wasn't particularly successful in physics. More or less the same happened to Hilbert, and I frankly said so in my account of his work,—although Hilbert undoubtedly penetrated much more deeply into the realm of physics than Birkhoff ever did."

BIRKHOFF

Biographical

WEYL, HERMANN

See correspondence 1945, February to March between Garrett Birkhoff, son of George D. Birkhoff of the Harvard Department Xxxxxx of Mathematics, and Hermann Weyl in which Birkhoff virtually assaults Weyl on method of handling a matter of corrections in the Mathematical Journal, and note Weyl's ease and temperance and broad xxxxx guage treatment of the episode in setting the young man straight.

Weyl was a member of the Birkhoff Memorial Finance Committee which was arranging for the financing and the publication of # three of George D. Birkhoff's books.

George D. Birkhoff 's last letter to Weyl was November 1, 1944. A letter from Marjorie G. Birkhoff (Mrs. George) dated March 1, makmam 1945, acknowledges Hermann Weyl's and his wife's sympathetic letter to Mrs. Birkhoff on the occasion of the death of George D.

Correspondence in the file before this reveals that Birkhoff and Weyl were at loggerheads on a theory of Birkhoff's on a perfection of the theory of relativity, prior to his death. The correspondence on this point gass runs from Satzbar August, 1944 until November, 1944.

FOREIGN SITE (Buildings & Grounds) FOUNDERS GEST ORIENTAL LIBRARY PRINCETON UNIVERSITY GENERAL REPORTS FLEXNER, A. STEIN MAASS, HERBERT VEBLEN, OSWALD OPPENHEIMER, ROBERT GOTTMANN, JEAN LEIDESDORF, SAMUEL D. ELLIOT, T. S. TOYNBEE, ARNOLD LEVY, DAVID M. BIRKHOFF, G. RICKELSER WEYL, HERMAN

GENERAL

Academic Personnel

Facilities
Corporation
Facilities
Relations W O A I
Academic Organization
Corporation
Biographical

(See FLEXNER, A., Biographical - Interview of 10/31/55)

SALARIES

GENERAL

FLEXNER, A.

PRINCETON UNIVERSITY

SCHOOL OF MATHEMATICS

BIRTCHOFF, GEORGE D.

BAMBERGER. LEWIS

WEYL, HERMANN

EINSTEIN, A.

Interviews with Prof. Oswald Veblen, 11/7/55, and 1 1/8/55. Filed in Vertical File under Interviews.

Interviews with Prof. Veblen 11/7/55, and 11/8/55.

Academic Organization

Academic Personnel

Relations WOAT Academic Organization

Biographical

PRINCETON UNIVERSITY (1, 2)

BUILDINGS AND GROUNDS (2)

GEST ORIENTAL LIBRARY (3)

VEBLEN, O. (1, 2)

EINSTEIN, A. (2)

BIRKHOFF (2)

FLEXNER, A. (1, 2, 3)

Relations WOAI

Facilities.

Interview with Oswald Veblen, 11/21/55. (One of 2 interviews of this date).

Filed in Vertical File under Veblen Interviews.

SCHOOL OF NATHEMATICS MORSE, MARSTON Academic Organization Biographical

BIRKHOFF, GEORGE D.

Casual Interview with Maraton Morse, March 26, 1956. Piled in Vertical File under Morce Interviews.

Casual Interview with Mores, 3/26/56

1956

1956

MUMBERS

MATHEMATICS. SCHOOL OF ECONOMICS AND POLITICS DIRECTOR WEYL, HERMAHN BIREHOFF, GEORGE PLEXIBR. A. ALEXARDER, JAMES W. Interview with James W. Alexander, June 27, 1956.

Interview with Alexander, 6/27/56

Piled in Vertical File under Alexander Interviews.

PARTICIPATION IN ADMINISTRATION

Academic Activities Academic Organization Administration Biographical

Academic Personnel

PRINCETON UNIVERSITY (1, 2, 3, 4)

HAVERE HARVARD (3)

JOHNS HOPKINS (1)

RUMANITIES (3)

MATHEMATICS (1, 2)

BUILDINGS AND GROUNDS (3, 4)

BISENHART (1, 2)
DODDS (12)
FLEXNER (1)
MOREY (1, 2)
ALEXANDER (2)
VON NEWHANN (2)
REFEX
VEBLEN (2, 30
BISENOFF (3, 4)
LEFSCHETZ (1, 2)

Relations WOAI

Educational Institutions Academic Activities Academic Activities Pacilities

Biographical

Interview with Bean Eisenhart, May 22, 1957.

Filed in Vertical File under Eisenhart Interviews.