



**Collection #:** MSS 978  
**Name:** Melvin H. Knisely, M.D. Papers  
**Dates:** 1929-1979  
**Size:** 8 cubic feet  
**Processed:** October 2008- April 2009 - TLD/EBF  
**Restrictions:** Restrictions noted in inventory.  
**Citation:** Melvin H. Knisely, M.D. Papers, MSS 978, Waring Historical Library, Medical University of South Carolina, Charleston, SC

### **Biographical Sketch**

Melvin Henry Knisely was born in 1904 in Hillman, Michigan. He graduated from Albion College, Albion, Michigan in 1927 with an A.B. degree. He taught high school physics for three years before entering the University of Chicago from which he received his Ph.D. degree in 1935.

In 1931 Dr. Knisely developed a new technique, using a fused quartz rod, for examining tissues and organs in living animals. With support from the Rockefeller Foundation, Dr. Knisely continued his research at the University of Chicago and eventually spent one year at the University of Copenhagen, Denmark, under Nobel Prize winner August Krogh. From 1937-1948 Dr. Knisely served on the University of Chicago faculty and performed research on malaria in conjunction with the University of Tennessee from 1940 to 1942.

Dr. Knisely was appointed Chairman of the Department of Anatomy for the Medical College of South Carolina (MCSC) in 1948, and served in that position for more than 20 years. Upon his retirement in 1969, he served in the department as a professor of anatomy until his death in 1975.

He was known in the field of medicine for his blood circulatory discoveries and a number of other facets of that field. One of his continuing interests in Charleston was in the field of sickle cell anemia.

Dr. Knisely was internationally known for his work in blood circulatory problems. He described the characteristics of circulating blood in health and disease and recognized the significance of intravascular agglutination of blood elements as a manifestation of pathologic physiology, for which he coined the term "sludged."

He was also internationally known for his microscopic studies in living anatomy. He developed the fused quartz rod whereby delicate living tissues can be transilluminated without damage for microscopic study. He was also known for his contributions to the knowledge of liver and splenic circulation.

Dr. Knisely was a member of Phi Beta Kappa and had received honorary degrees from the University of Gothenburg, Sweden, and the Medical University of South Carolina. With other medical scientists, he helped establish the American and European Microcirculation Conferences and the International Society on Oxygen Transport to Tissue.

### **Scope and Content**

The Melvin H. Knisely, M.D. Papers, 1929-1979, document Dr. Knisely's professional and personal activities. The bulk of the materials concern his personal and research interests into such areas as "sludged" blood and other blood circulatory problems, aging, alcohol and alcoholism, burns, diabetes, hypothermia, malaria, the nervous system, rheology, schizophrenia, stroke, and shock. Administrative records pertain to Dr. Knisely's tenure as professor and chairman of the Department of Anatomy at MCSC. The collection also consists of correspondence with family members, friends, and colleagues, including Nobel Prize winner, Dr. August Krogh. Record types include correspondence, memoranda, bibliographies, articles, news clippings, reprints, manuscripts, handwritten notes, lectures and speeches, press releases, grant applications, photographs, film, and videotapes. The collection is arranged into four series: (1) Correspondence, (2) Professional, (3) Research, and (4) Audiovisual.

### **Series Descriptions**

The **Correspondence Series**, 1929-1975, 2.75 cubic feet, consists of incoming and outgoing personal and professional correspondence. Personal correspondence documents Dr. Knisely's relationships with family members, colleagues, and friends. Professional correspondence concerns Dr. Knisely's scientific research into blood circulatory problems, alcohol abuse, etc., and includes requests to lecture at various universities, requests for reprints, and requests to review papers. Included are letters with Dr. August Krogh. Other record types include writings and papers, handwritten notes, articles, and news clippings. The series is arranged alphabetically.

The **Professional Series**, 1934-1979. 1 cubic foot, consists of documents created during Dr. Knisely's tenure as a professor and chairman of the Department of Anatomy at MCSC. Records include correspondence, memorandum, NIH and HEW publications, lectures, Department of Anatomy faculty and budget information, reports, and lectures/speeches. The series also includes biographical information on Dr. Knisely and his mentor, Dr. August Krogh, and the LeConte Medallion awarded to Dr. Knisely by the South Carolina Hall of Science and Technology. The series is arranged alphabetically.

The **Research Series**, 1931-1974 & no dates, 3.25 cubic feet, documents Dr. Knisely's scientific research studies and interests during his time at the University of Chicago, the University of Tennessee, and MCSC. The series includes correspondence, research notes, draft manuscripts, grant applications, subject files, news clippings, articles, reprints, photographs, film, and videotapes. The series is arranged alphabetically.

The **Audiovisual Series**, 1947 & no dates, 0.5 cubic feet, consists of VHS tapes, reel-to-reel film, and photographs. The bulk of the materials document Dr. Knisely's research projects and interests. There are a few personal photographs and several portraits of Dr. Knisely. The series is arranged alphabetically and then numerically by numbers written on items.

### **Subject Headings**

#### **LC**

Blood \$x Agglutination

#### **MESH**

Anatomy- Education

Anatomy- Education- South Carolina

Blood Circulation.

Cuttino, John Tindal, 1912-1988

Microcirculation.

Hematologic Diseases Physiopathology.

Education, Medical South Carolina 20<sup>th</sup> century.

Knisely, Melvin H. (Melvin Henry), 1904-1975

Krogh, August, 1874-1949.

Lynch, Kenneth Merrill, 1887-1974

Medical College of South Carolina. Dept. of Anatomy.

Medical College of the State of South Carolina. Dept. of Anatomy.

Medical University of South Carolina. Dept. of Cell Biology and Anatomy.

**Inventory****Correspondence****BOX 1**

- 1 A, 1939-1966
- 2 "Alcohol, Sludge, and Hypoxic Areas of Nervous System, Liver and Heart,"  
1967-1975 (1 of 3)
- 3 "Alcohol, Sludge, and Hypoxic Areas of Nervous System, Liver and Heart,"  
1967-1975 (2 of 3)
- 4 "Alcohol, Sludge, and Hypoxic Areas of Nervous System, Liver and Heart,"  
1967-1975 (3 of 3)
- 5 B, 1947-1956, 1961, 1967 (1 of 3)
- 6 B, 1947-1956, 1961, 1967 (2 of 3)
- 7 B, 1947-1956, 1961, 1967 (3 of 3)
- 8 Biographical/Personal, 1936-1971 (1 of 2)
- 9 Biographical/Personal, 1936-1971 (2 of 2)
- 10 Cuttino, John T., 1950-1955
- 11 C, 1948-1956 (1 of 2)
- 12 C, 1948-1956 (2 of 2)
- 13 D, 1948-1956 (1 of 2)
- 14 D, 1948-1956 (2 of 2)
- 15 E, 1944, 1948-1956
- 16 Embalmers' Supply Co., Westport, CT - R.C. Beck, 1956, 1960, 1961
- 17 F, 1940, 1947-1956 (1 of 2)
- 18 F, 1940, 1947-1956 (2 of 2)
- 19 G, 1940, 1948-1956 (1 of 3)
- 20 G, 1940, 1948-1956 (2 of 3)
- 21 G, 1940, 1948-1956 (3 of 3)
- 22 H, 1948-1956, 1964, 1966 (1 of 3)
- 23 H, 1948-1956, 1964, 1966 (2 of 3)

**BOX 2**

- 1 H, 1948-1956, 1964, 1966 (3 of 3)
- 2 I, 1950, 1954, 1955, 1956
- 3 Irwin, John, 1949-1955 (1 of 2)
- 4 Irwin, John, 1949-1955 (2 of 2)
- 5 J, 1948-1956
- 6 K, 1948-1961 (1 of 2)
- 7 K, 1948-1961 (2 of 2)
- 8 Knisely, Robert, 1955-1959
- 9 Knisely Correspondence with Steinbeck (& others added after collection),  
1964, 1965, 1988
- 10 Krahl, Vernon E., 1968
- 11 L, 1948-1956 (1 of 2)
- 12 L, 1948-1956 (2 of 2)

- 13 Lynch, Kenneth, 1947-1955, 1965 (1 of 2)
- 14 Lynch, Kenneth, 1947-1955, 1965 (2 of 2)
- 15 M, 1948-1956, 1965, 1966, 1971, 1972 (1 of 2)
- 16 M, 1948-1956, 1965, 1966, 1971, 1972 (2 of 2)
- 17 Miscellaneous, 1959-1974 (1 of 2)
- 18 Miscellaneous, 1959-1974 (2 of 2)
- 19 N, 1948-1956
- 20 O, 1948-1956, 1965
- 21 P, 1946, 1948-1956, 1970 (1 of 2)
- 22 P, 1946, 1948-1956, 1970 (2 of 2)
- 23 Personal, 1922-1975 (1 of 2)
- 24 Personal, 1922-1975 (2 of 2)
- 25 Personal, 1945-1977
- 26 Personal, 1958-1969 (1 of 3)

### **BOX 3**

- 1 Personal, 1958-1969 (2 of 3)
- 2 Personal, 1958-1969 (3 of 3)
- 3 Personal Letters, 1929, 1957, 1964-1975
- 4 Q, 1949, 1951, 1952, 1953
- 5 R, 1944, 1948-1956, 1969, 1970 (1 of 2)
- 6 R, 1944, 1948-1956, 1969, 1970 (2 of 2)
- 7 S, 1948-1956
- 8 S, 1948-1956, 1966 (1 of 2)
- 9 S, 1948-1956, 1966 (2 of 2)
- 10 T, 1948-1956, 1970, 1973
- 11 U, 1947, 1949, 1950, 1952, 1953, 1955, 1956
- 12 V, 1948, 1949, 1950, 1951, 1953, 1955, 1956
- 13 W, 1948-1956, 1969, 1970, 1972-1973 (1 of 3)
- 14 W, 1948-1956, 1969, 1970, 1972-1973 (2 of 3)
- 15 W, 1948-1956, 1969, 1970, 1972-1973 (3 of 3)
- 16 Weissenberg, 1959-1966
- 17 White, Jack, 1955-1958
- 18 Y & Z, 1947, 1949, 1951-1956

### **Professional**

- 19 Anatomy Department – Lockard, Isabel, circa 1958
- 20 Anatomy Department – Worthington, W. Curtis, circa 1958
- 21 Anatomy Department – Taber, Elsie, circa 1958
- 22 Anatomy Department – Gavan, James A., 1958
- 23 Anatomy Department – Knisely, Melvin H., 1958
- 24 Anatomy Department – Faculty & Staff, 1952, 1968 [Restricted]
- 25 Anatomy Department – Budget/Project Updates, 1957, 1960, 1961, 1965 [Restricted]
- 26 Article: *Listen: A Journal of Better Living*, December 1969

- 27 Award – LeConte Medallion, 1979
- 28 Bibliographic Information, 1955, 1960
- 29 Dittoes, n.d.
- 30 Dr. Zopf's Story, n.d.
- 31 Education – Medical, 1965-1967
- 32 Knisely Interests, 1965, 1967, 1969
- 33 Krogh, August, 1949-1951
- 34 Lectures, Dec. 1974-Jan. 1975, 1974, 1975, 1977 (1 of 2)

**BOX 4**

- 1 Lectures, Dec. 1974-Jan. 1975, 1974, 1975, 1977 (2 of 2)
- 2 Medical Colleges, 1966, 1967
- 3 Medical History/Grants, 1957, 1966, 1969, 1972, 1974
- 4 Reports: Knisely (1948-1968), 1968
- 5 SC Hall of Science and Technology – Knisely Induction, 1983, 1985
- 6 Special Matters Re. Melvin H. Knisely, 1934, 1950-1975 (1 of 4)
- 7 Special Matters Re. Melvin H. Knisely, 1934, 1950-1975 (2 of 4)
- 8 Special Matters Re. Melvin H. Knisely, 1934, 1950-1975 (3 of 4)
- 9 Special Matters Re. Melvin H. Knisely, 1934, 1950-1975 (4 of 4)
- 10 Summer School Teaching Course – Proposal, 1954, 1955
- 11 Thoughts & Talks, 1959, 1965, 1974 (1 of 2)
- 12 Thoughts & Talks, 1959, 1965, 1974 (2 of 2)

**Research**

- 13 Articles & Publications, 1945, 1956, 1961, 1964, 1967, 1968, 1972
- 14 Articles & Publications, 1956, 1957, 1959, 1968, 1974
- 15 Grant Application – Analysis of Disease Mechanisms, 1970
- 16 Grant Application – “Comparative Studies of Alcohol-Induced Pathology, 1971
- 17 Grant Application – “Pathologic Circulatory Physiology, Analytic Studies,” 1970
- 18 Manuscript – Sludged Blood, 1963 (1 of 3)
- 19 Manuscript – Sludged Blood, 1963 (2 of 3)
- 20 Manuscript – Sludged Blood, 1963 (3 of 3)
- 21 Publications – Miscellaneous, 1974, n.d.
- 22 Publications – Reprints, 1945, 1964, 1968
- 23 Reprints: “Abstracts – International Conference on Microcirculation,” 1968
- 24 Reprints: Abstracts – Miscellaneous, 1934-1966 (1 of 2)

**BOX 5**

- 1 Reprints: Abstracts – Miscellaneous, 1934-1966 (2 of 2)
- 2 Reprints: Bibliography, n.d.
- 3 Reprints: “First Conference on Microcirculating Physiology and Pathology,” 1954

- 4 Reprints: Journal Articles – Miscellaneous, 1934-1973 (1 of 5)
- 5 Reprints: Journal Articles – Miscellaneous, 1934-1973 (2 of 5)
- 6 Reprints: Journal Articles – Miscellaneous, 1934-1973 (3 of 5)
- 7 Reprints: Journal Articles – Miscellaneous, 1934-1973 (4 of 5)
- 8 Reprints: Journal Articles – Miscellaneous, 1934-1973 (5 of 5)
- 9 Reprints: “Methods for Study of Fresh Material,” 1950
- 10 Reprints: Miscellaneous (1 of 2)
- 11 Reprints: Miscellaneous (2 of 2)
- 12 Reprints – of Edward H. Bloch, 1948, 1956, 1959, 1972, 1973
- 13 Reprints – of Raymond L. Henry, 1968
- 14 Reprints: “The Settling of Sludge During Life,” 1961
- 15 Reprints: Shock, 1942-1946
- 16 Reprints: “Symposium – American Institute of Chemical Engineers,” 1969, 1971
- 17 Research: Convalescence Committee Application, 1943-1944
- 18 Research: “Methods” – Notebook/Journal, circa 1933-1937
- 19 Research Papers: “Alcohol and the Central Nervous System,” 1973
- 20 Research Papers: “Alcohol, Sludge, and Hypoxic Areas of Nervous System, Liver and Heart,” 1968
- 21 Research Papers: “Ante-Mortem Settling,” 1960
- 22 Research Papers: “Behavioral Effects of Erythrocyte Aggregation,” 1972
- 23 Research Papers: “Blood Must Circulate,” n.d.
- 24 Research Papers: “Brain Oxygen Supply and Neuronal Activity Under Normal and Hypoglycemic Conditions,” 1971
- 25 Research Papers: “A Computer Simulation for Prediction of Oxygen Limitations in Cerebral Gray Matter,” 1970
- 26 Research Papers: “Crushing of Muscle I” – Draft, n.d.
- 27 Research Papers: “A Detailed Quantitative Analysis of O<sub>2</sub> Transport in the Human Placenta During Steady and Unsteady State Conditions,” n.d.
- 28 Research Papers: Descriptions of Results, 1946
- 29 Research Papers: “The Development and Use of Equations for Predicting the Limits on the Rates of Oxygen Supply to the Cells of Living Tissues and Organs,” 1969
- 30 Research Papers: “Discussion,” 1955
- 31 Research Papers: “A Distributed Parameter Mathematical Analysis of Oxygen Exchange From Maternal to Fetal Blood in the Human Placenta,” 1970
- 32 Research Papers: Dog Paper, n.d.
- 33 Research Papers: “The Effects of Placental Oxygen Consumption and the Contractions in Fetal Oxygen Supply – A Steady and Unsteady State Mathematical Simulation,” 1972
- 34 Research Papers: “Experimental Separation of Quite Different Types of Circulatory Shock,” 1965
- 35 Research Papers: First Shock Paper, 1942
- 36 Research Papers: “Glucose Diffusion and Consumption in the Human Brain, Part I...,” 1971

- 37 Research Papers: "Glucose Diffusion and Consumption in the Human Brain, Part II...", 1971
- 38 Research Papers: "Hybrid Simulation – Oxygen Transport in the Microcirculation," 1970
- 39 Research Papers: "Intravascular Erythrocyte Aggregation (Blood Sludge)," 1965
- 40 Research Papers: "Introduction and Preliminary Excerpts on Crush Sludge" - Draft, n.d.
- 41 Research Papers: Kaolin on Ink Plus Heparin, n.d.
- 42 Research Papers: Kaolin on Ink without Heparin IV, n.d.
- 43 Research Papers: "A Mathematical Analysis Predicting Cerebral Tissue Reoxygenation Time as a Function of the Rate of Change of Effective Cerebral Blood Flow," 1970

**BOX 6**

- 1 Research Papers: "A Mathematical Simulation of Oxygen Release Diffusion, and Consumption in the Capillaries and Tissue of the Human Brain," 1967
- 2 Research Papers: "A Mathematical Simulation of Oxygen Release, Diffusion and Consumption in the Capillaries and Tissue of the Human Brain," circa 1968 (Report)
- 3 Research Papers: ["A Mathematical Simulation of the Simultaneous Diffusion of Oxygen and Glucose in the Capillaries and Tissues of the Human Brain"] circa 1968
- 4 Research Papers: "Modeling Cerebral Tissue Oxygenation with Autoregulation," 1971-1970
- 5 Research Papers: MSS on Observations of Blood Flow with Celluloid Windows, n.d.
- 6 Research Papers: MSS Sludged Blood III – Analysis of Mechanisms. Knisely, Crandall, Bloch, Barker, and Warner, n.d.
- 7 Research Papers: Muscle Pulp & Heparin III – Notes, n.d.
- 8 Research Papers: Muscle Pulp No Heparin II – Notes, n.d.
- 9 Research Papers: Notes on Crush Sludge Papers, n.d.
- 10 Research Papers: ["Old MSS probably has been retyped"], n.d.
- 11 Research Papers: Papers, 1942, 1944, 1945
- 12 Research Papers: Papers in Progress, 1942
- 13 Research Papers: Parts of Published Traumatic Shock MSS
- 14 Research Papers: Protocol on Crushed Mouse Striated Muscle (used in Trauma I paper), n.d.
- 15 Research Papers: Second Shock Papers, 1942
- 16 Research Papers: "Selective Phagocytosis I," 1948
- 17 Research Papers: "Separation of Shock Types," 1970
- 18 Research Papers: Sessinghouse's Comments on Trauma I MSS
- 19 Research Papers: Shock, 1946
- 20 Research Papers: "Simulating Oxygen Transport in the Microcirculation by Monte Carlo Methods," 1970
- 21 Research Papers: "Sludged Blood in Traumatic Shock" – Draft, n.d.



- 22 Research Papers: "Sludged Blood in Traumatic Shock" – II MSS Crushed Boy Memphis, n.d.
- 23 Research Papers: "Sludged Blood in Traumatic Shock III Analysis" – Draft, circa 1942
- 24 Research Papers: Spleen Manuscripts, 1950, 1954
- 25 Research Papers: "A Systems Analysis for the Transport of Oxygen and the Simultaneous Transport of Oxygen, Carbon Dioxide and Glucose in the Capillaries and Tissue of the Human Brain," 1972 (1 of 2)
- 26 Research Papers: "A Systems Analysis for the Transport of Oxygen and the Simultaneous Transport of Oxygen, Carbon Dioxide and Glucose in the Capillaries and Tissue of the Human Brain," 1972 (2 of 2)
- 27 Research Papers: Traumatic Shock Notes, 1943
- 28 Subject: Alcohol, 1968-1974 (1 of 5)
- 29 Subject: Alcohol, 1968-1974 (2 of 5)
- 30 Subject: Alcohol, 1968-1974 (3 of 5)
- 31 Subject: Alcohol, 1968-1974 (4 of 5)
- 32 Subject: Alcohol, 1968-1974 (5 of 5)

**BOX 7**

- 1 Subject: Alcohol – Science, 1970-1971 (1965-1971)
- 2 Subject: Anoxia, 1942
- 3 Subject: Articles – Aging, 1947, 1962
- 4 Subject: Atomic Bomb Casualty, 1947
- 5 Subject: "Blood Vessels in the Conjunctiva" – Adolf Coccius, 1852, n.d.
- 6 Subject: Body Temperature in Shock, circa 1942
- 7 Subject: Bolsi, Dino [article by], 1969
- 8 Subject: Brush Heinzen Term on Crush Syndrome, circa 1945
- 9 Subject: Burns, 1958, 1960, 1962, 1963, 1964
- 10 Subject: Chemotherapy, 1938
- 11 Subject: "Conley on Traumatic Shock – Gregersen's Comments are here too," 1941-1942
- 12 Subject: Crush Syndrome, 1941, 1942
- 13 Subject: Crushed Sludge I Materials, n.d.
- 14 Subject: Dextran, 1961
- 15 Subject: Diabetes, 1963, 1965
- 16 Subject: Diabetes, 1969
- 17 Subject: Diminished Blood Flow, n.d.
- 18 Subject: Environments, 1973, n.d.
- 19 Subject: Harkins Reprints (Mostly Burn), 1931, 1940-1942
- 20 Subject: Heart Circulation, 1966 (1 of 2)
- 21 Subject: Heart Circulation, 1966 (2 of 2)
- 22 Subject: Histamine & Other Toxins, circa 1942
- 23 Subject: Human Blood Donors, 1942 [Restricted]
- 24 Subject: Human Crush Patient Memphis, n.d.
- 25 Subject: Human Shock Cases, 1942 [Restricted]
- 26 Subject: Hypothermia, 1958, 1960, 1973

- 27 Subject: Initiating Factors in Psychosis – Notes, 1965
- 28 Subject: Malaria, 1941, 1954, 1959, 1961-1963, 1966
- 29 Subject: Malaria, 1965, 1967, 1969
- 30 Subject: Manuscript – “The Intermediary Circulation in the Red Pulp of the Mouse Spleen and Thermal Changes in Splenic Circulation” by Harold M. Peck, circa 1950
- 31 Subject: Manuscript – “A Microscopic Study of the Circulatory System of the Living Trans-Illuminated Spleen of the Mouse and Rat,” by Paul Eugene Palm, 1951
- 32 Subject: MHK Panel Discussion on Plasma & Blood – Mechanism of Shock, Chicago, IL, 1944
- 33 Subject: Nervous System [articles], 1944, 1955, 1958, 1959, n.d.
- 34 Subject: Notes on How to Make a Shock Movie, n.d.
- 35 Subject: Notes on References to include in Shock Paper: References mostly to Wiggers and from a discussion with him, n.d.
- 36 Subject: Oligemia, n.d.
- 37 Subject: Postpartum Information – Reprints & Translations, 1965 [1934, 1941, 1943, 1949, 1950, 1958]
- 38 Subject: Psychiatric Complications Following Cardiac Surgery, 1942, 1947, 1949, 1965
- 39 Subject: Psychosis [articles], 1925, 1947, 1949, 1961, 1965, 1968, 1969 (1 of 2)
- 40 Subject: Psychosis [articles], 1925, 1947, 1949, 1961, 1965, 1968, 1969 (2 of 2)
- 41 Subject: Rheology, 1956, 1958, 1962-1964
- 42 Subject: Schizophrenia [articles], 1969, 1970

### **BOX 8**

- 1 Subject: Shock, 1962, 1963, 1964, 1965, 1967
- 2 Subject: Shock II, n.d.
- 3 Subject: Shock Protocols from Memphis, 1942
- 4 Subject: Spleen – “The Microcirculation of the Spleen of the Mouse” by Arthur K. Parpert, Allen O. Whipple, & Joseph J. Chang, circa 1950
- 5 Subject: Spleen – “Report on Chronic Spleen Enlargements” by Werner Hueck (translated by J.S. Harvin, 1950), 1950
- 6 Subject: Staining Solutions – Slide Cases, 1962, 1963, 1967
- 7 Subject: Stroke, 1959, 1968
- 8 Subject: Tobacco/Smoking, 1963-1968
- 9 Subject: Toxins, n.d.
- 10 Subject: Venning, Hoffman, & Browne – Journal Biol. Chem. 148: 455-6, 1943: Cortin-like Substances in Postoperative Patients, 1943

### **Audiovisual**

- 11 Films & Videos, 1947 & n.d.
- 12 Photographs, 1953, 1954, 1969, 1975, n.d. (1 of 2)

- 13 Photographs, 1953, 1954, 1969, 1975, n.d. (2 of 2)
- 14 Sketches & Photographs, n.d.