

**A guide to the papers of Lester G. (1905-1979) and Lucena J. Barth (1918-?)  
Marine Biological Laboratory  
Woods Hole, MA 02543**

Processed by  
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Archives of the Marine Biological Laboratory  
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Woods Hole, MA 02543  
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Manuscript Collection MBL  
(Three 24" x 12" boxes)

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BIOGRAPHICAL INFORMATION

Lester Barth was born in 1905 in Detroit, Michigan. He received an A.B. in Zoology in 1926 from Wayne University in Detroit, Michigan, an M.A. from the University of Michigan at Ann Arbor in 1928, and a Ph. D. from the University of Chicago in 1929. Barth was on the faculty of the Zoology Department at Columbia University from 1932-1964. He was an investigator at the Marine Biological Laboratory in Woods Hole from 1926-1972 and an instructor at the MBL during summer sessions from 1933-1942. In 1948, he married his second wife, Lucena Jaeger.

Lucena Barth, was born Lucena Jaeger in Kokomo, Indiana on January 29, 1918. She received her Ph.D. in Zoology from Columbia in 1945 and remained there as an investigator until 1964. She was a lecturer in Biology at Barnard College from 1956-61. From 1964-1974 she was an investigator at the Marine Biological Laboratory in Woods Hole. The Barths worked together, conducting research in chemical and experimental embryology, working with frog embryos. Together they wrote "The Energetics of

Development: A Study of Metabolism in the Frog Egg” published in 1954. The Barths were both members of the corporation of the Marine Biological Laboratory.

#### PROVENANCE

The Lester and Lucena J. Barth papers were donated to the MBL Archives. A preliminary processing was made when the papers were received into the archives: papers were left in their original folders and placed in boxes.

#### ARRANGEMENT

The Barths’ papers have been kept in their original order and labeled with their original folder titles. When several folders have been combined during re-folding the original order has been indicated by a semicolon between the titles. If documents were not originally labeled the title has been placed in square brackets.

#### SCOPE AND CONTENT

The Barths’ papers are in three 12” x 24” boxes and range in date from 1931 to 1974. The majority of the papers consists of lab and lecture notes, but also contains some writings, article reprints, grant proposals, photographs, and correspondence.

<b>Box</b>	<b>Folder</b>	<b>Title</b>	<b>Date Range</b>
1	1	Zoology 219: Tris with Sucrose or Lithium Induction and Double Li	Fall 1969-70
1	2	Zoology 219: Tris, Ouabain, etc., Notes	1969
1	3	Zoology 219: Speculations	Oct 1972
1	4	Summaries of summaries	1972-1973
1	5	Sucrose in various comb of Ca & Na, various conc of Ca & Na, Pastreat ± Ca ± Mg, various conc Ca	1966
1	6	Ca Continuous, Na dependancy of	1967
1	7	Na depend., not Due to Ca:Na Notes; Mn H Na dependancy; Mg H, Na + dependancy	1966
1	8	Na + addition of to SS; High Ca H na dependancy; “Normal” induction, Na+ depend	1967
1	9	High Na+, Na dependancy of; “Normal” induction effect of added Ca H, Na+ depend.	1967
1	10	Modified Na+ dependence, delay in ring cell differentiation in 257 Na, Li+ used as inductor	1968
1	11	Data, sucrose induction, ion depend.	Oct 12-Dec 8, 1972
1	12	Calcium dependence	Dec 18, 1972-Jan 3, 1973
1	13	Ca- Mg dependence	Jan 4-Feb 1, 1973
1	14	Ca- dependence of P-rings, K induction of notochord	Feb 6-Mar 21, 1973
1	15	Ca- dependence	Mar 27-Apr 6, 1973

1	16	Fig. 1, discussion, ion regulation; Misc. notes, fall, spring	1973-74
1	17	Misc. notes, Ca induction	
1	18	Misc. notes, general theory	1971-72
1	19	Calcium + Ca 45 uptake data; Sodium dependence discussion	1968
1	20	Notochord, record of fixation for slides	Spring 1973
1	21	Melanogenesis	
1	22	Na 22 localization, S 13+ 14-, preliminary	1969
1	23	Na 22 Ca 45	1971
1	24	[Prostaglandin E, the Upjohn Co.]	1969
1	25	CPM/ Embryo calculation method; Specific activities, for Dev. Biol.	1968-72
1	26	Notes on Ca-45 variability	1967
1	27	Lester's log	1968-69
1	28	NEN Sheet, Na 22, uptake at various stages, Efflux	1968
1	29	Experiments with Burr: Na, K, Cl, OR during develop.	Fall 1968
1	30	[Nuclear Magnetic Resonance]	1968
1	31	Hybrid & normal stage series, Ca 45 Na 22; Localization, normal & hybrid gastrula, Ca 45 Na 22	April 1969
1	32	Ca H uptake during development	1968
1	33	Ca 45, NEN technical data, localization in neurula	Mar 17-Apr 4, 1969
1	34	Hybrid	1964-67
1	35	Competence, Hybrids	1962-65
1	36	Hybrid	Fall 1966-Spring 1967
1	37	Hybrid	1964
1	38	Hybrids, experiments planned, references	1965-67
1	39	Hybrids	1965
1	40	[Notochord, references, James Lash articles & correspondence]	1973
1	41	Kroeger & Lezzi, Na/K salivary gland chromosomes, Kafiani	1969-71
1	42	Morrill, Kostellow and related	1965-73
1	43	Papers for Zoo 217-218: Localization of Na-22 uptake, explants in culture, preliminary	Dec 1968-Jan 1969
1	44	Papers for Zoo 217-218: PGE data May 1969; PGE fall 1969	1969
1	45	Ions, K+-Rb+ notes	1967-73
1	46	Ionophores references	1968-73
1	47	Gen. Plan-III, from Whittaker	1972-73
1	48	Cyclic AMP	1970-74
1	49	Cyclic AMP notes, spring 1974	1972-74
1	50	Future problems/work methods, reviews	1964-73
1	51	Carbon, sequential induction	1964
1	52	Sequential induction data	1963-64
1	53	Zoology 222	1954
1	54	Kjeldahl N 2, 160g/egg	[1945]
1	55	Fructose, [zoology notes]	1945
1	56	Glycogen, glucose; labile phosphate method; phospholipid-P; lactic acid	1945-46
2	1	Pentose; phosphate total digestion, 10g/egg; NH 3 distillation	1945

		160g/egg, Nessler method	
2	2	Lucena Jaeger Exptl. Embryology notebook 1	1931
2	3	Lucena Jaeger Exptl. Embryology notebook 2	1931
2	4	Ouabain 1968; Ouabain, Lester & Lucena data 1971-72	1968-72
2	5	Size of aggregates; 257 for Healing, Suc	1968-71
2	6	Inhibitor: CO <sub>2</sub> ; -CN; DNP; Uridine C14; Na F	1968
2	7	Electrophoresis [notes and slides]	1956
2	8	Electrophoresis paper	1946-54
2	9	Crude research notes to be assembled; [notes]	1944-53
2	10	Tubularia Pennaria-Fucus; Tubularia RQ NH <sub>2</sub> , Inorg P, etc.	1945
2	11	Permeability of Perisarc Tubularia; Tubularia inhibition by CO <sub>2</sub> accumulation; Woods Hole program	1945
2	12	Tubularia notes [also see folder #37]	1936-44
2	13	Low O <sub>2</sub> in Dev & resp. also high O <sub>2</sub> tensions [also see folder #38]	1931-44
2	14	Current research, explants	1954
2	15	[Dissociated cells, notes]	1957
2	16	[Photographs] from L. J. Barth's slides, both low and high power	1961-63
2	17	Perophora, Tubularia, Arbacia records; Perophora, Woods Hole 1958-59	1958-73
2	18	Perophora, Woods Hole	1960-63
2	19	NSF, Oct 1 to April 30	1974
2	20	[NSF Grant] First copy report & application	1974
2	21	Concentration Solutions, B.F. notes; "Blastocoel fluid" also Ionophores	1974-75
2	22	Depolarization in 20m K; High K: low Ca	1974
2	23	Ca: K continuous; 1:1 Na:K ± 6mM Ca; Na:K on Li <sup>+</sup>	1969-74
2	24	PVP: calf serum and egg albumin, Agar	Nov 1973
2	25	K <sup>+</sup> depolarization, high K on uninduced cells	1969
2	26	Bermuda, preliminary ascidian group effect	1947-48
2	27	Friday Harbor: equipment; research notes, Obelia	1950
2	28	-SH	1962-63
2	29	[Lab tables]; Nerve cell types, morphology	1973-1974
2	30	Ionophores: Lasalocid; A 23187	1974
2	31	Frog Logs [3 notebooks]	1963-75
2	32	Solutions- cell culture; Molarities; MBL lab contents	1973
2	33	Solutions: directions, washing autoclave	1972
2	34	Data, lecture outline, misc. notes	1965-66
2	35	Not yet used (in any paper)	July 1967
2	36	Chemical embryology outline; Gradient method and solutions; Gradient	1951-56
2	37	[Oversized charts from folder # 12]	1936-44
2	38	[Oversized material from folder #13]	
3	1	Stage series, Longworth buffer, Electrophoresis	1951
3	2	Phosphate Xt. Electrophoresis; Electrophoresis reading, reprints	1950-55
3	3	Electrophoresis preliminary- Nov 1951, Feb 1954; (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> pptns; March 1954	1951-54

3	4	Cell culture	Spring 1957
3	5	Centrifugation, Pasteels; Electron microscope on Organizer	1954-1957
3	6	Early ATP-ase-protein fractionations; "Neurosin"	1946-47
3	7	-SH Expts.; -SH tests	1954-55
3	8	Susceptibility- stage of development	1955
3	9	Summary of work in progress	Summer 1952
3	10	Stage series, KCl xt., Electrophoresis	1951
3	11	P-glyceri ; Barium & Calcium precipitation method; Phosphate fractions; Ba fractionation	1945-46
3	12	Misc. analytical procedures	1936-43
3	13	Preliminary	Oct. 1955
3	14	Yolk -SH; IAA, IACET, K3 Fe(CN)6, KMnO4	1955
3	15	Dictyostelium	1954
3	16	Misc. PO4 notes & methods	1945-68
3	17	Notebook 1 (Lucena) Cell Culture	1957-58
3	18	Notebook (Lucena), Cell Culture	1957-58
3	19	Notebook (Lucena) Oct 1958	1958-60
3	20	Notebook 2 (Lucena) Cell Cultures	1958-1959
3	21	Susan Goldhor Notebook 1: Varieties & Types of Mold,	1959-60
3	22	[Susan Goldhor Correspondence, Summary of Experiments]	1967
3	23	Notebook 3 (Lucena) Illustrations	1959-61
3	24	Notebook 4 (Lucena)	1962-64
3	25	Notebook (Lucena) Cellular Differentiation	1961-64
3	26	Notebook (Lucena) MBL Woods Hole	1964
3	27	Na 22, NEN Sheet, Published Biol. Bull. '67	1966-67
3	28	O.P. & Frogs Eggs	
3	29	Mn 1964-5	1964-65
3	30	Sucrose & Other Sugars, 1966	1965
3	31	Sucrose followed by various conc. of Na	1965-66
3	32	Li followed by various conc of Na, Data for Li paper in progress	1966
3	33	Preliminary Exp. With Sucrose as Inductor	1965
3	34	Na SG.	1966
3	35	Ca	[1956?-65]
3	36	Sucrose on S, 12-	1965
3	37	Na: K Ratio	1966
3	38	Cu	1965
3	39	Fe H; Zn; Li>>SCN>Br	1964-65
3	40	Mg; Li>Na= K, Na + K	1964-65
3	41	[Autoradi y?] Perophera Tubularia	Summer 1964
3	42	Gradient Chamber Expts. [Notebook]	1954-1956
3	43	Rana [Notebook]	[1933?-54]
3	44	Ion Ratios (High Mg H, Ca H), Low Na+, Summaries	1972-74
3	45	K+, Mg 2+, Ca, Data Lucena	Feb-May 1972
3	46	Colcemid	1973
3	47	Colc	1967-68
3	48	Notochord Paper [Misc. Data]	1972-73

3 49 Ion Regulation, Final Revised Copy as Submitted to Dev. Biol. 1974  
[Correspondence, Illustrations]