Eric S Boyd

List of Publications by Year
in descending order

131 papers	7,221 citations	43973 48 h-index	69108 77 g-index
139 all docs	139 docs citations	139 times ranked	6712 citing authors

#	Article	IF	Citations
1	[FeFe]- and [NiFe]-hydrogenase diversity, mechanism, and maturation. Biochimica Et Biophysica Acta - Molecular Cell Research, 2015, 1853, 1350-1369.	1.9	400
2	Engineering algae for biohydrogen and biofuel production. Current Opinion in Biotechnology, 2009, 20, 264-271.	3.3	391
3	Stepwise [FeFe]-hydrogenase H-cluster assembly revealed in the structure of HydAÎ”EFG. Nature, 2010, 465, 248-251.	13.7	295
4	The Mercury Resistance Operon: From an Origin in a Geothermal Environment to an Efficient Detoxification Machine. Frontiers in Microbiology, 2012, 3, 349.	1.5	209
5	New insights into the evolutionary history of biological nitrogen fixation. Frontiers in Microbiology, 2013, 4, 201.	1.5	199
6	The Membrane-Associated Methane Monooxygenase (pMMO) and pMMO-NADH:Quinone Oxidoreductase Complex from Methylococcus capsulatus Bath. Journal of Bacteriology, 2003, 185, 5755-5764.	1.0	196
7	Metagenomes from High-Temperature Chemotrophic Systems Reveal Geochemical Controls on Microbial Community Structure and Function. PLoS ONE, 2010, 5, e9773.	1.1	186
8	The modular respiratory complexes involved in hydrogen and sulfur metabolism by heterotrophic hyperthermophilic archaea and their evolutionary implications. FEMS Microbiology Reviews, 2013, 37, 182-203.	3.9	136
9	A pathway for biological methane production using bacterial iron-only nitrogenase. Nature Microbiology, 2018, 3, 281-286.	5.9	131
10	Diversity, Abundance, and Potential Activity of Nitrifying and Nitrate-Reducing Microbial Assemblages in a Subglacial Ecosystem. Applied and Environmental Microbiology, 2011, 77, 4778-4787.	1.4	119
11	A thermophilic bacterial origin and subsequent constraints by redox, light and salinity on the evolution of the microbial mercuric reductase. Environmental Microbiology, 2010, 12, 2904-2917.	1.8	116
12	Molecular evidence for an active endogenous microbiome beneath glacial ice. ISME Journal, 2013, 7, 1402-1412.	4.4	116
13	Roadmap for naming uncultivated Archaea and Bacteria. Nature Microbiology, 2020, 5, 987-994.	5.9	115
14	Mixotrophy drives niche expansion of verrucomicrobial methanotrophs. ISME Journal, 2017, 11, 2599-2610.	4.4	107
15	Spectral and thermodynamic properties of Ag(I), Au(III), Cd(II), Co(II), Fe(III), Hg(II), Mn(II), Ni(II), Pb(II), U(IV), and Zn(II) binding by methanobactin from Methylosinus trichosporium OB3b. Journal of Inorganic Biochemistry, 2006, 100, 2150-2161.	1.5	106
16	Interplay between Oxygen and Feâ€“S Cluster Biogenesis: Insights from the Suf Pathway. Biochemistry, 2014, 53, 5834-5847.	1.2	106
17	Spectral, Kinetic, and Thermodynamic Properties of Cu(I) and Cu(II) Binding by Methanobactin fromMethylosinus trichosporiumOB3bâ€. Biochemistry, 2006, 45, 1442-1453.	1.2	105
18	An Alternative Path for the Evolution of Biological Nitrogen Fixation. Frontiers in Microbiology, 2011, 2, 205.	1.5	105

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19	Isolation, Characterization, and Ecology of Sulfur-Respiring <i>Crenarchaea</i> Inhabiting Acid-Sulfate-Chloride-Containing Geothermal Springs in Yellowstone National Park. Applied and Environmental Microbiology, 2007, 73, 6669-6677.	1.4	102
20	The deep, hot biosphere: Twenty-five years of retrospection. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 6895-6903.	3.3	102
21	Transcriptional Profiling of Nitrogen Fixation in Azotobacter vinelandii. Journal of Bacteriology, 2011, 193, 4477-4486.	1.0	99
22	Evolution of Molybdenum Nitrogenase during the Transition from Anaerobic to Aerobic Metabolism. Journal of Bacteriology, 2015, 197, 1690-1699.	1.0	97
23	Influence of bedrock mineral composition on microbial diversity in a subglacial environment. Geology, 2013, 41, 855-858.	2.0	93
24	Chemolithotrophic Primary Production in a Subglacial Ecosystem. Applied and Environmental Microbiology, 2014, 80, 6146-6153.	1.4	92
25	Methanogenesis in subglacial sediments. Environmental Microbiology Reports, 2010, 2, 685-692.	1.0	86
26	Electron Transfer to Nitrogenase in Different Genomic and Metabolic Backgrounds. Journal of Bacteriology, 2018, 200, .	1.0	85
27	Temperature and pH controls on glycerol dibiphytanyl glycerol tetraether lipid composition in the hyperthermophilic crenarchaeon Acidilobus sulfurireducens. Extremophiles, 2011, 15, 59-65.	0.9	83
28	The role of geochemistry and energetics in the evolution of modern respiratory complexes from a proton-reducing ancestor. Biochimica Et Biophysica Acta - Bioenergetics, 2016, 1857, 958-970.	0.5	79
29	Defining Electron Bifurcation in the Electron-Transferring Flavoprotein Family. Journal of Bacteriology, 2017, 199, .	1.0	78
30	Involvement of Intermediate Sulfur Species in Biological Reduction of Elemental Sulfur under Acidic, Hydrothermal Conditions. Applied and Environmental Microbiology, 2013, 79, 2061-2068.	1.4	76
31	Unification of [FeFe]-hydrogenases into three structural and functional groups. Biochimica Et Biophysica Acta - General Subjects, 2016, 1860, 1910-1921.	1.1	76
32	Phylogenetic and Functional Analysis of Metagenome Sequence from High-Temperature Archaeal Habitats Demonstrate Linkages between Metabolic Potential and Geochemistry. Frontiers in Microbiology, 2013, 4, 95.	1.5	73
33	Geobiological feedbacks and the evolution of thermoacidophiles. ISME Journal, 2018, 12, 225-236.	4.4	70
34	The Role of Tetraether Lipid Composition in the Adaptation of Thermophilic Archaea to Acidity. Frontiers in Microbiology, 2013, 4, 62.	1.5	69
35	Biosynthesis of complex ironâ€“sulfur enzymes. Current Opinion in Chemical Biology, 2011, 15, 319-327.	2.8	65
36	Modeling the Habitat Range of Phototrophs in Yellowstone National Park: Toward the Development of a Comprehensive Fitness Landscape. Frontiers in Microbiology, 2012, 3, 221.	1.5	64

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37	Contrasting Patterns of Community Assembly in the Stratified Water Column of Great Salt Lake, Utah. Microbial Ecology, 2013, 66, 268-280.	1.4	64
38	[FeFe]-hydrogenase in Yellowstone National Park: evidence for dispersal limitation and phylogenetic niche conservatism. ISME Journal, 2010, 4, 1485-1495.	4.4	63
39	Classifying the metal dependence of uncharacterized nitrogenases. Frontiers in Microbiology, 2012, 3, 419.	1.5	62
40	Aerobic and Anaerobic Thiosulfate Oxidation by a Cold-Adapted, Subglacial Chemoautotroph. Applied and Environmental Microbiology, 2016, 82, 1486-1495.	1.4	62
41	Mineralogy Influences Structure and Diversity of Bacterial Communities Associated with Geological Substrata in a Pristine Aquifer. Microbial Ecology, 2007, 54, 170-182.	1.4	61
42	Physiological adaptations to serpentinization in the Samail Ophiolite, Oman. ISME Journal, 2019, 13, 1750-1762.	4.4	61
43	CO ₂ Uptake and Fixation by a Thermoacidophilic Microbial Community Attached to Precipitated Sulfur in a Geothermal Spring. Applied and Environmental Microbiology, 2009, 75, 4289-4296.	1.4	60
44	Ecological differentiation in planktonic and sediment-associated chemotrophic microbial populations in Yellowstone hot springs. FEMS Microbiology Ecology, 2016, 92, fiw137.	1.3	60
45	â€œCandidatus Thermonerobacter thiotrophicus,â€•A Non-phototrophic Member of the Bacteroidetes/Chlorobi With Dissimilatory Sulfur Metabolism in Hot Spring Mat Communities. Frontiers in Microbiology, 2018, 9, 3159.	1.5	57
46	Mixing of meteoric and geothermal fluids supports hyperdiverse chemosynthetic hydrothermal communities. Nature Communications, 2019, 10, 681.	5.8	57
47	Geobiological feedbacks, oxygen, and the evolution of nitrogenase. Free Radical Biology and Medicine, 2019, 140, 250-259.	1.3	56
48	Two functionally distinct NADP+-dependent ferredoxin oxidoreductases maintain the primary redox balance of Pyrococcus furiosus. Journal of Biological Chemistry, 2017, 292, 14603-14616.	1.6	54
49	Carbon Source Preference in Chemosynthetic Hot Spring Communities. Applied and Environmental Microbiology, 2015, 81, 3834-3847.	1.4	52
50	Evolutionary significance of an algal gene encoding an [FeFe]-hydrogenase with F-domain homology and hydrogenase activity in Chlorella variabilis NC64A. Planta, 2011, 234, 829-843.	1.6	50
51	[FeFe] Hydrogenase Genetic Diversity Provides Insight into Molecular Adaptation in a Saline Microbial Mat Community. Applied and Environmental Microbiology, 2009, 75, 4620-4623.	1.4	48
52	Hydrogen Metabolism and the Evolution of Biological Respiration. Microbe Magazine, 2014, 9, 361-367.	0.4	47
53	Competition for Ammonia Influences the Structure of Chemotrophic Communities in Geothermal Springs. Applied and Environmental Microbiology, 2014, 80, 653-661.	1.4	46
54	Stable Isotope Probing for Microbial Iron Reduction in Chocolate Pots Hot Spring, Yellowstone National Park. Applied and Environmental Microbiology, 2018, 84, .	1.4	46

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55	Biological nitrogen fixation in acidic highâ€temperature geothermal springs in Yellowstone National Park, Wyoming. Environmental Microbiology, 2011, 13, 2204-2215.	1.8	45
56	Principles of Geobiochemistry. Elements, 2015, 11, 395-401.	0.5	43
57	Single-Cell Genomics of Novel Actinobacteria With the Woodâ€"Ljungdahl Pathway Discovered in a Serpentinizing System. Frontiers in Microbiology, 2020, 11, 1031.	1.5	41
58	Environmental Constraints Underpin the Distribution and Phylogenetic Diversity of nifH in the Yellowstone Geothermal Complex. Microbial Ecology, 2011, 61, 860-870.	1.4	40
59	Influence of glaciation on mechanisms of mineral weathering in two high Arctic catchments. Chemical Geology, 2016, 420, 37-50.	1.4	40
60	Effect of salinity on mercury methylating benthic microbes and their activities in Great Salt Lake, Utah. Science of the Total Environment, 2017, 581-582, 495-506.	3.9	40
61	The Intersection of Geology, Geochemistry, and Microbiology in Continental Hydrothermal Systems. Astrobiology, 2019, 19, 1505-1522.	1.5	40
62	Microbial substrate preference dictated by energy demand rather than supply. Nature Geoscience, 2017, 10, 577-581.	5.4	39
63	H/D exchange mass spectrometry and statistical coupling analysis reveal a role for allostery in a ferredoxin-dependent bifurcating transhydrogenase catalytic cycle. Biochimica Et Biophysica Acta - General Subjects, 2018, 1862, 9-17.	1.1	38
64	Diversification of methanogens into hyperalkaline serpentinizing environments through adaptations to minimize oxidant limitation. ISME Journal, 2021, 15, 1121-1135.	4.4	37
65	Expanded Diversity and Phylogeny of mer Genes Broadens Mercury Resistance Paradigms and Reveals an Origin for MerA Among Thermophilic Archaea. Frontiers in Microbiology, 2021, 12, 682605.	1.5	37
66	The DUF59 Containing Protein SufT Is Involved in the Maturation of Iron-Sulfur (FeS) Proteins during Conditions of High FeS Cofactor Demand in Staphylococcus aureus. PLoS Genetics, 2016, 12, e1006233.	1.5	37
67	Subsurface processes influence oxidant availability and chemoautotrophic hydrogen metabolism in Yellowstone hot springs. Geobiology, 2018, 16, 674-692.	1.1	35
68	Substrate specificity and evolutionary implications of a NifDK enzyme carrying NifBâ€co at its active site. FEBS Letters, 2010, 584, 1487-1492.	1.3	34
69	Origin and Evolution of Flavin-Based Electron Bifurcating Enzymes. Frontiers in Microbiology, 2018, 9, 1762.	1.5	34
70	Environmental Conditions Constrain the Distribution and Diversity of Archaeal merA in Yellowstone National Park, Wyoming, U.S.A.. Microbial Ecology, 2011, 62, 739-752.	1.4	33
71	Influence of Growth Phase, pH, and Temperature on the Abundance and Composition of Tetraether Lipids in the Thermoacidophile Picrophilus torridus. Frontiers in Microbiology, 2016, 7, 1323.	1.5	33
72	Bioenergetic constraints on the origin of autotrophic metabolism. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2020, 378, 20190151.	1.6	33

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73	The Molecular Basis for Life in Extreme Environments. Annual Review of Biophysics, 2021, 50, 343-372.	4.5	31
74	The Physiological Functions and Structural Determinants of Catalytic Bias in the [FeFe]-Hydrogenases CpI and CpII of Clostridium pasteurianum Strain W5. Frontiers in Microbiology, 2017, 8, 1305.	1.5	30
75	Molecular Evidence for an Active Microbial Methane Cycle in Subsurface Serpentinite-Hosted Groundwaters in the Samail Ophiolite, Oman. Applied and Environmental Microbiology, 2021, 87, .	1.4	29
76	Acidianus Tailed Spindle Virus: a New Archaeal Large Tailed Spindle Virus Discovered by Culture-Independent Methods. Journal of Virology, 2016, 90, 3458-3468.	1.5	27
77	Accessing the Subsurface Biosphere Within Rocks Undergoing Active Lowâ€Temperature Serpentinization in the Samail Ophiolite (Oman Drilling Project). Journal of Geophysical Research G: Biogeosciences, 2021, 126, e2021JG006315.	1.3	27
78	Methylmercury enters an aquatic food web through acidophilic microbial mats in Yellowstone National Park, Wyoming. Environmental Microbiology, 2009, 11, 950-959.	1.8	26
79	The path of electron transfer to nitrogenase in a phototrophic alphaâ€proteobacterium. Environmental Microbiology, 2018, 20, 2500-2508.	1.8	26
80	Radical AdoMet enzymes in complex metal cluster biosynthesis. Biochimica Et Biophysica Acta - Proteins and Proteomics, 2012, 1824, 1254-1263.	1.1	25
81	Merging metagenomics and geochemistry reveals environmental controls on biological diversity and evolution. BMC Ecology, 2014, 14, 16.	3.0	24
82	Alkaline vents and steep Na+ gradients from ridge-flank basaltsâ€"Implications for the origin and evolution of life. Geology, 2017, 45, 1135-1138.	2.0	24
83	Effects of salinity on microbialiteâ€associated production in Great Salt Lake, Utah. Ecology, 2019, 100, e02611.	1.5	24
84	Phylogenomic analysis of novel Diaforarchaea is consistent with sulfite but not sulfate reduction in volcanic environments on early Earth. ISME Journal, 2020, 14, 1316-1331.	4.4	24
85	Mechanisms of Mineral Substrate Acquisition in a Thermoacidophile. Applied and Environmental Microbiology, 2018, 84, .	1.4	23
86	Aqueous Geochemical and Microbial Variation Across Discrete Depth Intervals in a Peridotite Aquifer Assessed Using a Packer System in the Samail Ophiolite, Oman. Journal of Geophysical Research G: Biogeosciences, 2021, 126, e2021JG006319.	1.3	23
87	4 Metabolic and taxonomic diversification in continental magmatic hydrothermal systems. , 0, , .		22
88	Probing the geological source and biological fate of hydrogen in Yellowstone hot springs. Environmental Microbiology, 2019, 21, 3816-3830.	1.8	22
89	Reductive dissolution of pyrite by methanogenic archaea. ISME Journal, 2021, 15, 3498-3507.	4.4	22
90	Evolutionary and Biotechnological Implications of Robust Hydrogenase Activity in Halophilic Strains of Tetraselmis. PLoS ONE, 2014, 9, e85812.	1.1	21

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91	Stable isotopes track biogeochemical processes under seasonal ice cover in a shallow, productive lake. Biogeochemistry, 2014, 120, 359-379.	1.7	19
92	Investigating the Composition and Metabolic Potential of Microbial Communities in Chocolate Pots Hot Springs. Frontiers in Microbiology, 2018, 9, 2075.	1.5	19
93	An Ecological Perspective on Dolomite Formation in Great Salt Lake, Utah. Frontiers in Earth Science, 2020, 8, .	0.8	19
94	Geochemical, Biological, and Clumped Isotopologue Evidence for Substantial Microbial Methane Production Under Carbon Limitation in Serpentinites of the Samail Ophiolite, Oman. Journal of Geophysical Research G: Biogeosciences, 2021, 126, e2020JG006025.	1.3	19
95	Lithogenic hydrogen supports microbial primary production in subglacial and proglacial environments. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	18
96	[FeFe]-Hydrogenase Abundance and Diversity along a Vertical Redox Gradient in Great Salt Lake, USA. International Journal of Molecular Sciences, 2014, 15, 21947-21966.	1.8	17
97	Electron acceptor availability alters carbon and energy metabolism in a thermoacidophile. Environmental Microbiology, 2018, 20, 2523-2537.	1.8	17
98	Geologic legacy spanning >90â€‰years explains unique Yellowstone hot spring geochemistry and biodiversity. Environmental Microbiology, 2019, 21, 4180-4195.	1.8	17
99	A review of the mechanisms of mineral-based metabolism in early Earth analog rock-hosted hydrothermal ecosystems. World Journal of Microbiology and Biotechnology, 2019, 35, 29.	1.7	17
100	Seasonal hydrologic and geologic forcing drive hot spring geochemistry and microbial biodiversity. Environmental Microbiology, 2021, 23, 4034-4053.	1.8	17
101	An essential role for tungsten in the ecology and evolution of a previously uncultivated lineage of anaerobic, thermophilic Archaea. Nature Communications, 2022, 13, .	5.8	16
102	Differential temperature and pH controls on the abundance and composition of H-GDGTs in terrestrial hot springs. Organic Geochemistry, 2014, 75, 109-121.	0.9	15
103	Chapter 7.2â€ƒMount Erebus. Geological Society Memoir, 2021, 55, 695-739.	0.9	15
104	Pathways of Iron and Sulfur Acquisition, Cofactor Assembly, Destination, and Storage in Diverse Archaeal Methanogens and Alkanotrophs. Journal of Bacteriology, 2021, 203, e0011721.	1.0	15
105	Biochemical and Structural Properties of a Thermostable Mercuric Ion Reductase from Metallosphaera sedula. Frontiers in Bioengineering and Biotechnology, 2015, 3, 97.	2.0	14
106	The Beta Subunit of Non-bifurcating NADH-Dependent [FeFe]-Hydrogenases Differs From Those of Multimeric Electron-Bifurcating [FeFe]-Hydrogenases. Frontiers in Microbiology, 2020, 11, 1109.	1.5	14
107	Origin of arsenolipids in sediments from Great Salt Lake. Environmental Chemistry, 2019, 16, 303.	0.7	13
108	Examining Pathways of Iron and Sulfur Acquisition, Trafficking, Deployment, and Storage in Mineral-Grown Methanogen Cells. Journal of Bacteriology, 2021, 203, e0014621.	1.0	13

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109	Biogeochemical and microbial seasonal dynamics between water column and sediment processes in a productive mountain lake: Georgetown Lake, MT, USA. Journal of Geophysical Research G: Biogeosciences, 2016, 121, 2064-2081.	1.3	12
110	Microbialites of Great Salt Lake. , 2020, , 87-118.		11
111	Organomercurial Lyase (MerB)-Mediated Demethylation Decreases Bacterial Methylmercury Resistance in the Absence of Mercuric Reductase (MerA). Applied and Environmental Microbiology, 2022, 88, aem0001022.	1.4	11
112	Substrate preference, uptake kinetics and bioenergetics in a facultatively autotrophic, thermoacidophilic crenarchaeote. FEMS Microbiology Ecology, 2016, 92, fiw069.	1.3	10
113	Investigating Abiotic and Biotic Mechanisms of Pyrite Reduction. Frontiers in Microbiology, 2022, 13, .	1.5	10
114	Reductive biomining of pyrite by methanogens. Trends in Microbiology, 2022, 30, 1072-1083.	3.5	10
115	Biochemical and Structural Characterization of Enolase from Chloroflexus aurantiacus: Evidence for a Thermophilic Origin. Frontiers in Bioengineering and Biotechnology, 2015, 3, 74.	2.0	9
116	4 Metabolic and taxonomic diversification in continental magmatic hydrothermal systems. , 2015, , 57-96.		9
117	Editorial: Microbial Hydrogen Metabolism. Frontiers in Microbiology, 2020, 11, 56.	1.5	8
118	Stable Fe isotope fractionation during dissimilatory Fe(III) reduction by a thermoacidophile in acidic hydrothermal environments. Geochimica Et Cosmochimica Acta, 2021, 292, 427-451.	1.6	8
119	Hydrogenases, Nitrogenases, Anoxia, and H2 Production in Water-Oxidizing Phototrophs. , 2013, , 37-75.		7
120	Cyanobacteria and Algae Meet at the Limits of Their Habitat Ranges in Moderately Acidic Hot Springs. Journal of Geophysical Research G: Biogeosciences, 2022, 127, .	1.3	7
121	Ecological Dichotomies Arise in Microbial Communities Due to Mixing of Deep Hydrothermal Waters and Atmospheric Gas in a Circumneutral Hot Spring. Applied and Environmental Microbiology, 2021, 87, e0159821.	1.4	6
122	Transformation of lowâ€molecularâ€weight organic acids by microbial endoliths in subsurface mafic and ultramafic igneous rock. Environmental Microbiology, 2022, 24, 4137-4152.	1.8	6
123	<scp><i>A</i></scp><i>rchaea</i> on the move. Environmental Microbiology Reports, 2015, 7, 385-387.	1.0	5
124	Unexpected Abundance and Diversity of Phototrophs in Mats from Morphologically Variable Microbialites in Great Salt Lake, Utah. Applied and Environmental Microbiology, 2020, 86, .	1.4	5
125	Structural evolution of the ancient enzyme, dissimilatory sulfite reductase. Proteins: Structure, Function and Bioinformatics, 2022, 90, 1331-1345.	1.5	5
126	23. Origin and evolution of Fe-S proteins and enzymes. , 2014, , 619-636.		3

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127	Discovery and Characterization of Thermoproteus Spherical Piliferous Virus 1: a Spherical Archaeal Virus Decorated with Unusual Filaments. Journal of Virology, 2020, 94, .	1.5	2
128	Effects of Salinity on Microbialiteâ€Associated Production in Great Salt Lake, Utah. Bulletin of the Ecological Society of America, 2019, 100, e01513.	0.2	1
129	THE MICROBIALITES OF UTAHâ€™S GREAT SALT LAKE: GEOLOGY VS. BIOLOGY. , 2017, , .		1
130	Geochemical and Stable Fe Isotopic Analysis of Dissimilatory Microbial Iron Reduction in Chocolate Pots Hot Spring, Yellowstone National Park. Astrobiology, 2021, 21, 83-102.	1.5	0
131	Biogenesis of the Hâ€cluster of the [FeFe]â€hydrogenase. FASEB Journal, 2013, 27, 98.2.	0.2	0