

International Symposium



The dynamically active egg: The legacy of Ernest Everett Just

Sala Conferenze
Stazione Zoologica
Anton Dohrn
Villa Comunale
Napoli

13 maggio 2013
(lunedì)
15:00 - 18:35



FIG. 38.—Irradiated egg of *Nereis* showing nuclear division without extrusion of polar bodies.

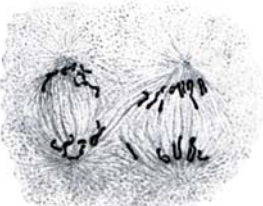


FIG. 39.—Irradiated egg of *Nereis* with four groups of chromosomes resulting from division of the two spindles in Fig. 38.



FIG. 40.—First cleavage spindle, irradiated egg of *Nereis*, showing some of the seventy chromosomes.

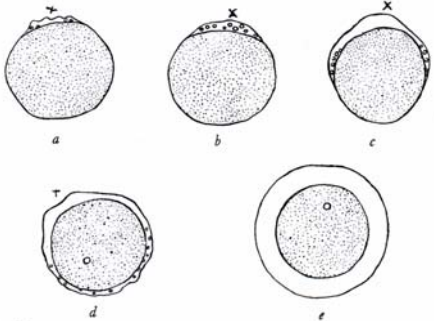


FIG. 18.—Successive stages of membrane-separation in the living egg of *Echinarrachnius parma*, site of sperm-entry.



Scientific Organization

Luigia Santella
Jong T. Chun

Exhibit

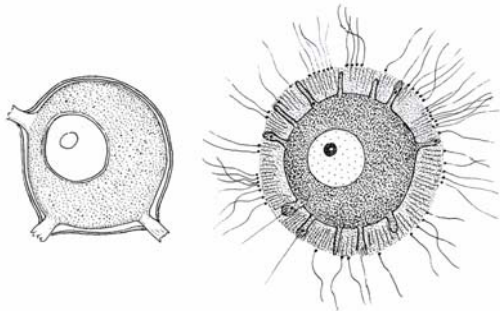
Luigia Santella
Christiane Groeben

Secretariat

Margherita Groeben
Stazione Zoologica Anton Dohrn
Villa Comunale, 80121 Naples, Italy
Tel. +39 081 5833247
Fax +39 081 7641355
e-mail: margherita.groeben@szn.it

Illustrations from "The Biology of the Cell Surface" by E.E. Just. 1939, P. Blakiston's Son & Co., Inc. Philadelphia, PA, USA





In 1909 the young African-American biologist Ernest Everett Just (1883-1941) spent his first summer at the Marine Biological Laboratory (MBL) in Woods Hole, Massachusetts, USA, to work on the fertilization of marine invertebrate eggs under the supervision of Frank Lillie, then an authority in the field. He was to spend the next 20 summers at the MBL amidst increasing hostility motivated by reasons of racial discrimination, but also by his pioneering and unconventional ideas. He was eventually forced to move to Europe to continue his research, stopping first at the *Stazione Zoologica* in Naples in 1929. Until 1940 he worked for extended periods at the Naples Station, the *Kaiser Wilhelm Institut* in Berlin and the Biological Station of Roscoff (France) on fertilization and development of echinoderms and other marine animals. In 1940 he was briefly interned in France in a camp for prisoners by the German Nazis. He was rescued by the U.S. State Department and returned to Washington and Howard University where, despite his delicate health, he resumed his research activities and his faculty position. He died of pancreatic cancer in October 1941.

Just published more than seventy scientific articles and wrote two books: *Basic Methods for Experiments on Eggs of Marine Animals* and *The Biology of the Cell Surface*, both published in 1939. He had forcefully proposed that the "ectoplasm", i.e., the peripheral layer of the cytoplasm, rather than the nucleus, was the dynamic core of the cell. He was convinced that the surface of the egg cell had an "independent irritability", i.e., the ability to actively respond to the external environment and to control nuclear functions and embryonic development. The Symposium will recapitulate the fundamental steps of his scientific and human history, and will recognize the pioneering value of his work in the light of the new results and conclusions in the area of fertilization and embryonic development.

International Symposium

The dynamically active egg: The legacy of Ernest Everett Just

Opening address

15:00-15:15

Silvano Focardi (President, SZN)

Guido Trombetti (Region of Campania)

Antonella Di Nocera (City of Naples)

Donald L. Moore (US Consul General, Naples)

Luigia Santella (Organizer, SZN)

Presentation

15:15-15:45

Kenneth R. Manning

(Massachusetts Institute of Technology, USA)

Black Apollo of Science: The life of Ernest Everett Just

15:45-16:15

Christiane Groeben (Naples, Italy)

"One gets Naples and the Station into one's blood":

The Naples experience of Ernest Everett Just

16:15-16:30

Discussion

16:30-17:00 *Coffee break*

17:00-17:30

Walton M. Byrnes (Howard University, USA)

Ernest Everett Just: Champion of the Cell Surface

17:30-18:00

Stuart Newman (New York Medical College, USA)

"Physics and chemistry in a new dimension": E.E. Just and evolutionary developmental biology"

18:00-18:30

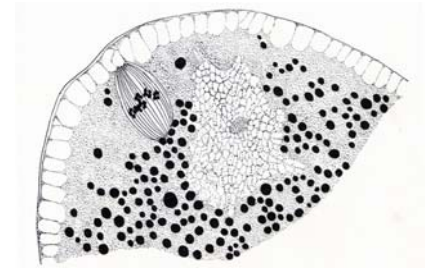
Luigia Santella (SZN, Naples, Italy)

Fertilization in echinoderms: The legacy of Ernest Everett Just

18:30-18:35

Closing Remarks

Luigia Santella



Ernest Everett Just (1883-1941), giovane biologo afroamericano trascorse tra il 1909 e il 1929 ogni estate al *Marine Biological Laboratory di Woods Hole, Massachusetts, USA*, per effettuare i suoi studi sulla fecondazione di uova di invertebrati marini sotto la supervisione del noto embriologo Frank Lillie. Discriminato dalla comunità scientifica americana per il colore della pelle e per le sue idee pionieristiche fu costretto a lavorare in Europa, compiendo la sua prima tappa a Napoli alla Stazione Zoologica nel 1929. Fino al 1940 lavorò per lunghi periodi alla Stazione Zoologica di Napoli, al *Kaiser Wilhelm Institut* di Berlino e alla stazione di biologia marina di Roscoff (Francia) sulla fecondazione e lo sviluppo soprattutto di echinodermi. Nel 1940 fu brevemente internato in un campo di prigionia dai Nazisti. Fu salvato dal dipartimento di stato americano e ritornò alla *Howard University* a Washington dove, nonostante la sua cagionevole salute, riprese la sua attività di ricerca e la sua posizione alla Facoltà. Morì di cancro al pancreas nell'ottobre del 1941.

Just ha pubblicato più di 70 articoli scientifici e scritto due libri: *Basic Methods for Experiments on Eggs of Marine Animals* e *The Biology of the Cell Surface* entrambi pubblicati nel 1939. Egli sosteneva con forza che "l'ectoplasma", la regione esterna del citoplasma, e non il nucleo costituiva il cuore dinamico della cellula. Era convinto che la superficie della cellula uovo possedesse una "irritabilità indipendente" e cioè la capacità di rispondere in modo attivo all'ambiente esterno così come di controllare le funzioni nucleari e lo sviluppo embrionale. Nell'incontro saranno discussi i punti fondamentali della sua storia umana e scientifica, e verrà riconosciuto il suo lavoro pionieristico alla luce dei nuovi dati scientifici prodotti nel campo della fecondazione e dello sviluppo embrionale.