

# Scanning Microscopy

---

Volume 9 | Number 1

Article 25

---

12-14-1994

## Reply by A. Carretero et al.

Ana Carretero  
*University of Barcelona*


H. Ditrich

M. Navarro

H. Splechtna

J. Ruberte

Follow this and additional works at: <https://digitalcommons.usu.edu/microscopy>

 Part of the [Biology Commons](#)

---

### Recommended Citation

Carretero, Ana; Ditrich, H.; Navarro, M.; Splechtna, H.; and Ruberte, J. (1994) "Reply by A. Carretero et al.," *Scanning Microscopy*. Vol. 9 : No. 1 , Article 25.

Available at: <https://digitalcommons.usu.edu/microscopy/vol9/iss1/25>

This Article is brought to you for free and open access by the Western Dairy Center at DigitalCommons@USU. It has been accepted for inclusion in Scanning Microscopy by an authorized administrator of DigitalCommons@USU. For more information, please contact [digitalcommons@usu.edu](mailto:digitalcommons@usu.edu).



## Reply by A. Carretero *et al.*

Dear Editor,

The study of vascular casts in the embryo by means of the scanning electron microscope represents the main subject of our research. We fully agree with DeRuiter and Gittenberger-de Groot in that corrosion casting is a valuable tool to study the early angiogenesis in embryos.

In order to obtain the cast, we use the technique described in the referred paper: Technical improvements in corrosion casting of small specimens: A study on mesonephric tubules and vessels of chicken embryos, by A. Carretero, H. Ditrich, M. Navarro, H. Splechtna, J. Ruberte, *Scanning Microscopy*, vol. 7(4), pages 1333-1338 (1993). This paper was intended to provide technical hints about how to simplify the somewhat tricky preparation of such casts.

Several techniques of vascular casting of very early embryos have been described in the literature. All of them are interesting and useful depending on the laboratory equipment, technical support and the subject of study. However, the minimization of mechanical stress to the object itself by choosing the umbilical or vitellin vessels as the site of injection seems, at least theoretically, advantageous. We can conclude that, after having studied the vascular system in different species with different techniques, this technique seems to be easy, fast and inexpensive. Moreover, the same technique can be used for casting very early embryonic stages with very good results. Thus, a micropipette is used as a cannula, which is handled with a micromanipulator (Narishige). Figure 2 shows a vascular cast of the heart and its related great vessels of a 65 to 69 hour-old chick embryo (stage 18 of Hamburger and Hamilton, 1951). The developing heart (atrium, ventricle and truncus arteriosus), the dorsal aorta and the aortic arches and the anterior, posterior and common cardinal veins can be seen.

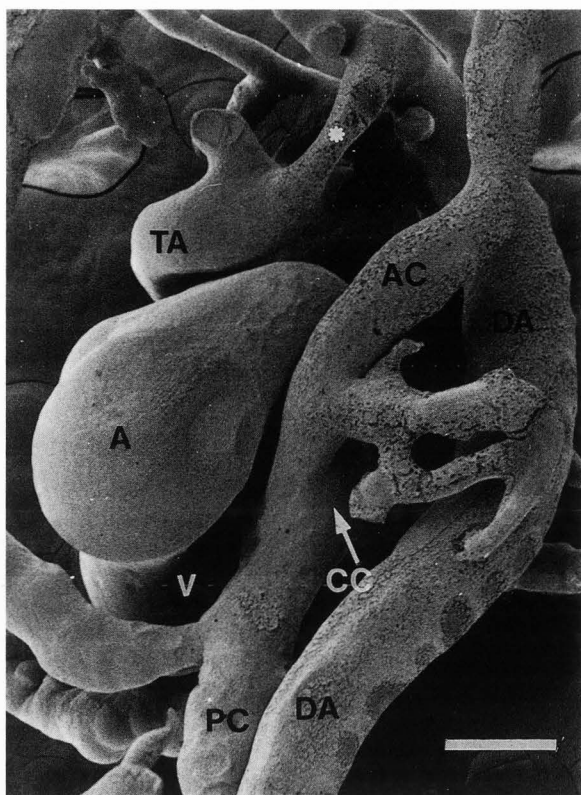
We would like to stress the statement that investigators should be encouraged to use this method on embryonic material.

December 14, 1994

Ana Carretero,  
on behalf of the authors.  
Dept. Anatomy & Embryology  
Autonomous Univ. Barcelona  
08193 Bellaterra, Barcelona  
Spain

### Reference

Hamburger V, Hamilton HL (1951) A series of normal stages in the development of chick embryos. *J. Morphol.* **88**, 49-92.



**Figure 2.** Lateral (left) view of the heart and the great vessels in a chicken embryonic cast of the 18 stage of H-H. A: atrium; V: ventricle; TA: truncus arteriosus; DA: dorsal aorta; AC: anterior cardinal vein; PC: posterior cardinal vein; CC: common cardinal vein; \*: aortic arch. Bar = 0.2 mm.

### References

DeRuiter MC, Hogers B, Poelmann RE, VanIperen L, Gittenberger-de Groot AC (1991) The development of the vascular system in quail embryos: A combination of microvascular corrosion casts and immunohistochemical identification. *Scanning Microsc.* **5**, 1081-1090.

DeRuiter MC, Gittenberger-de Groot AC, Rammos S, Poelmann RE (1989) The special status of the pulmonary arch artery in the branchial arch system of the rat. *Anat Embryol* **179**, 319-351.