On traces in the heart of its transitions in form during foetal life. Part I / by P.D. Handyside.

ON

TRACES IN THE HEART

OF ITS

NSITIONS IN FORM DURING FŒTAL LIFE.

BY

P. D. HANDYSIDE, M.D.

From the Proceedings of the Royal Society of Edinburgh.

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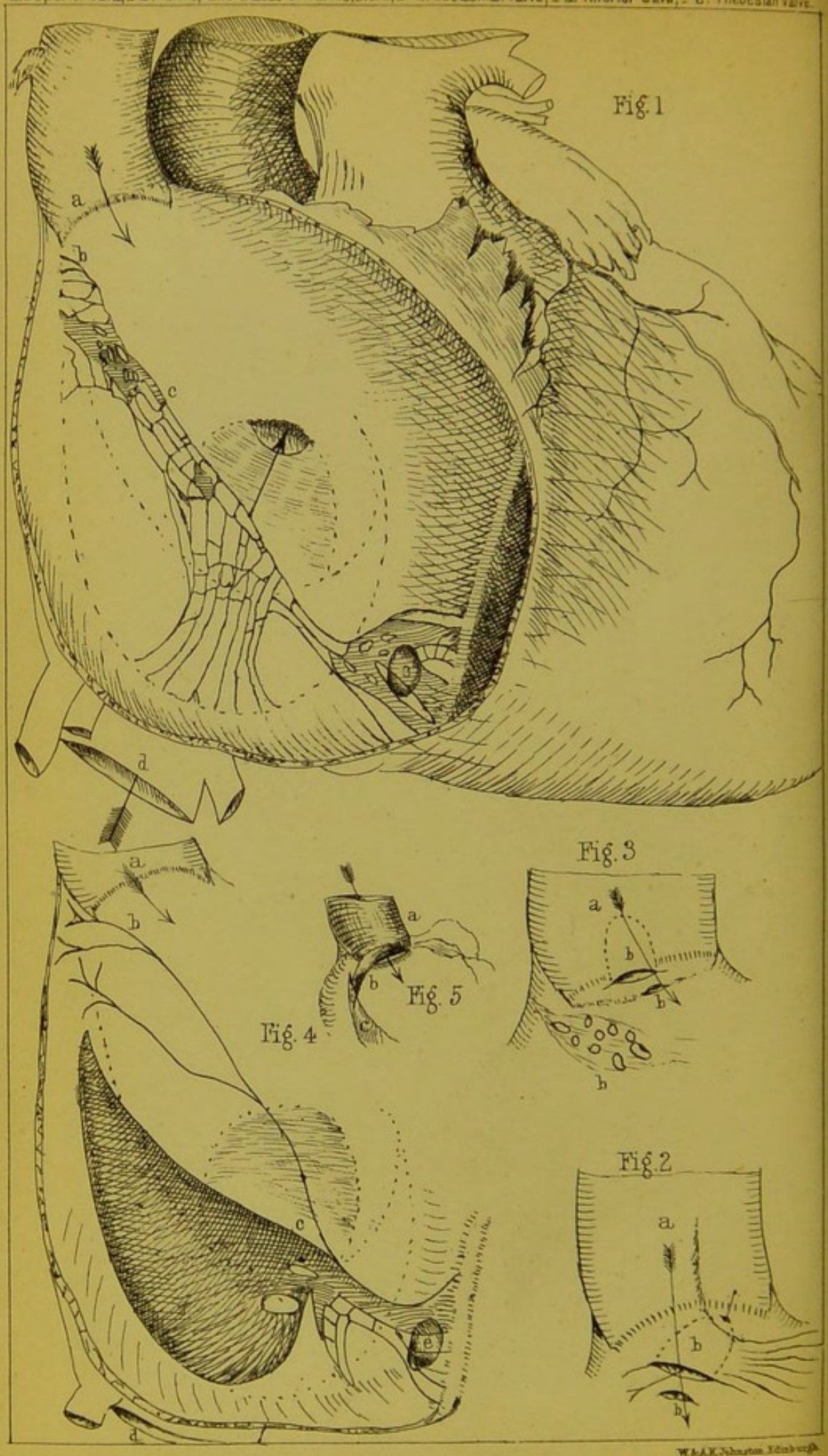
MDCCCLXIX.


ROYAL COLLEGE OF SURGEONS OF ENGLAND

a. Superior Cava, - b. Valves, and traces of Valves there, - c. Eustachian Valve, - d. Inferior Cava, - e. Thebesian Valve.



W. & A. K. Johnston, Edinburgh.

TRACES OF TRANSITIONS IN THE FŒTAL HEART.

ON

TRACES IN THE HEART

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TRANSITIONS IN FORM DURING FŒTAL LIFE.

(Part I. With a Plate.)

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P. D. HANDYSIDE, M.D.

From the Proceedings of the Royal Society of Edinburgh Vol. VI. No. 79.

In this paper the author described in the adult human heart *certain vestiges of structures* which, during fœtal life, exist in an entire and perfect state. At birth, however, these, ceasing to be of use, generally disappear.

In allusion, *first*, to the Eustachian valve, he exhibited (and illustrated by the annexed sketch, fig. 1), an apparently unique specimen—obtained in his dissecting-rooms about six years ago—namely, a very large and reticulated Eustachian valve, prolonged at its middle third in the form of a semi-insulated cribriform fibrous lamina, taking a crescentic form continuously throughout, and after a valvular manner ending at the distance of three-sixteenths of an inch from the crest or rim of entrance of the superior vena cava.

After alluding, *secondly*, to the significant case shown and described to the Society on the 4th ult. by Professor Turner, Dr Handyside showed (fig. 2), and gave a sketch of—

Thirdly, another specimen from his rooms, which presents on

the posterior wall, and at the rim of entrance, of the superior cava a well defined and deep lacuna, within which open five large Thebesian foramina. The caval half of the patulous border of this lacuna is protected by an oblique semilunar valve, one quarter of an-inch in breadth and of a like depth. This valve is composed of a duplicature of endocardium, and is evidently designed to secure the entrance of blood into the auricle.*

The author next compared shortly these three abnormal cases, demonstrating how they formed at once a graduated scale or anatomical series mutually illustrative, each specimen introducing to the mind its own peculiar features of morphological interest. He considered, however, these cases as chiefly interesting—when compared with the results of certain changes undergone by the human embryo between the third and the seventeenth weeks after conception—in relation with the structural affinities they present to permanently impressed forms in some cold and warm-blooded animals; after a like manner to what is seen in the venous system of fishes as a *permanent* form of structure, and yet presents itself, but *temporarily* in the history of the development, during their embryo state, of *higher* vertebrate animals. He referred to homologues in the Myxinoidei family of *fishes;* to the Ophidian order of *reptiles;* among *birds*, to the *Aquila chrysäetos* and the *Casuarius emeu;* and among *mammals*, to the *Delphinus phocæna*, the *Macropus*,

* The additional sketches, figs. 3 and 4, represent peculiarities in two adult hearts, and fig. 5, in a fœtal heart, dissected in Dr Handyside's rooms. In fig. 3 a valve (¼ inch broad by ¼ inch deep), formed of endocardium with an intervening lamina of striped muscle, lay within and parallel to the posterior segment of the rim of the superior cava. In fig. 4 is an unusually large persistent Eustachian valve, continuous at its left insertion with a still more remarkable Thebesian valve. The former, which is very large, has an insulated fibrous offset from its left extremity, which runs half-way across the sinus venosus towards the tubercle of Lower, and then dichotomously divides and subdivides thrice before it is implanted into the arched line between the right cornu of the Eustachian valve and the right segment of the rim of the superior cava. Fig. 5 represents, in a male fœtus of 6½ months, presented to Dr Handyside's museum during last summer, the occurrence of a *complete* semilunar valve situated at the termination of the upper vena cava, its convex border being attached to the anterior and right wall of the vein, its concave free border projecting into the auricle. The right crus of this valve is inserted into the auricular wall on a plane ¼ of an inch behind, and decussating, the right ascending cornu of the prolonged Eustachian valve.

the *Elephas*, the *Stenops potto*, the *Simia gorilla*, and the *Simia troglodites*.

The author's view then, morphologically, is—1, That structures evolved *progressively*, and corresponding at given points to *certain permanent states in the vegetable and brute creation*, may uniformly be traced in man at fixed periods of his embryonic and fœtal existence; and accordingly,—2, that vestiges in the adult heart of early arrested and merely temporary structures—such as those narrated by the author in this paper—record distinctly, in his opinion, the existence *of definite stages of embryonic and fœtal development in man*, through which stages he invariably passes towards his perfect adaptation for higher functions.

(*Part Second* of those observations—On the Permanence of the Foramen Ovale—is reserved for another paper).

NOTES OF ABNORMALITIES

OBSERVED IN THE DISSECTING-ROOM OF McGILL UNIVERSITY,

FROM OCTOBER, 1875, TO MAY, 1879,

BY

FRANCIS J. SHEPHERD, M.D., M.R.C.S., Eng.,

DEMONSTRATOR OF ANATOMY,

Surgeon to the Out-Door Department of the Hospital.

(From the Montreal General Hospital Reports, Vol. I., 1880.)

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