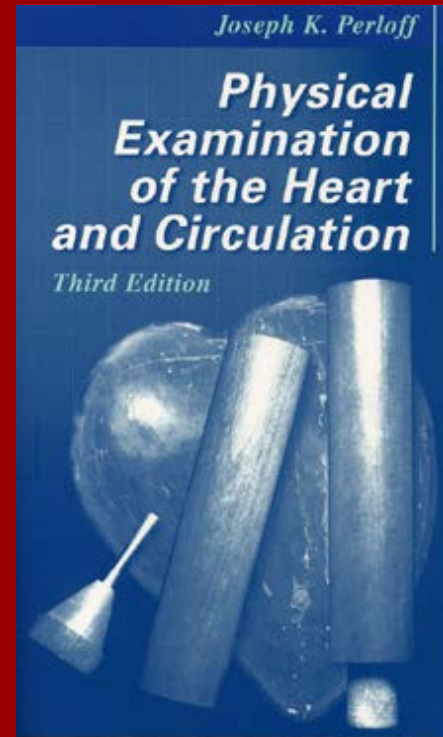
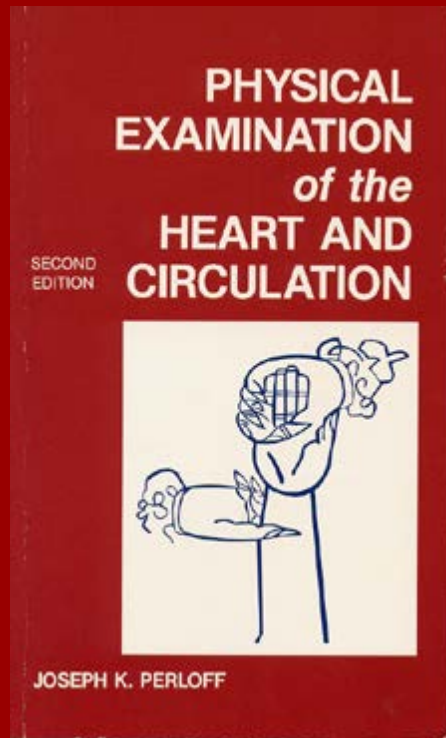
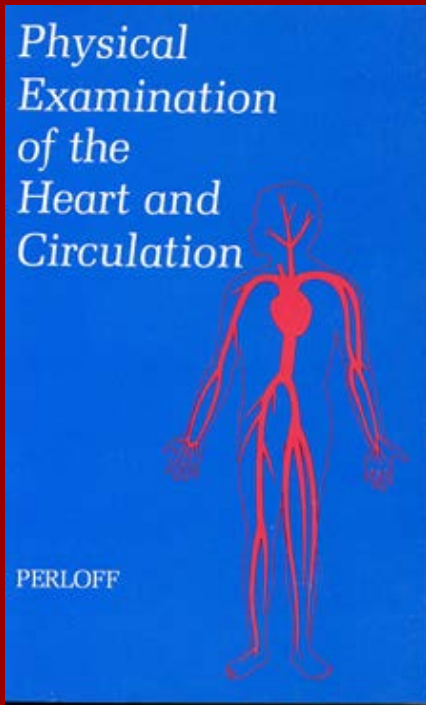
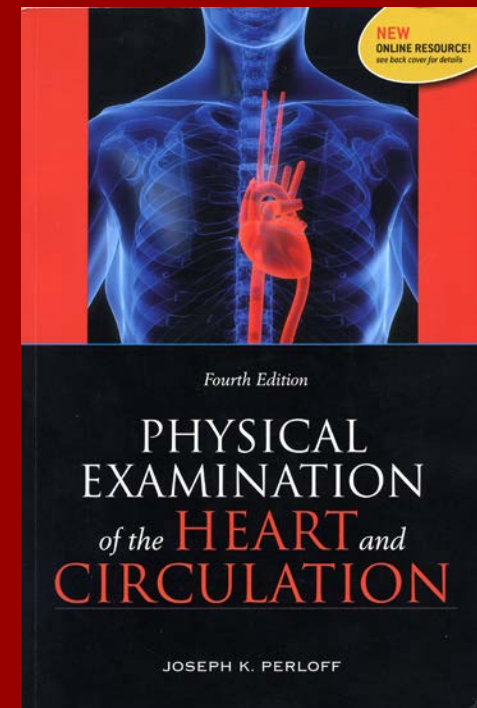
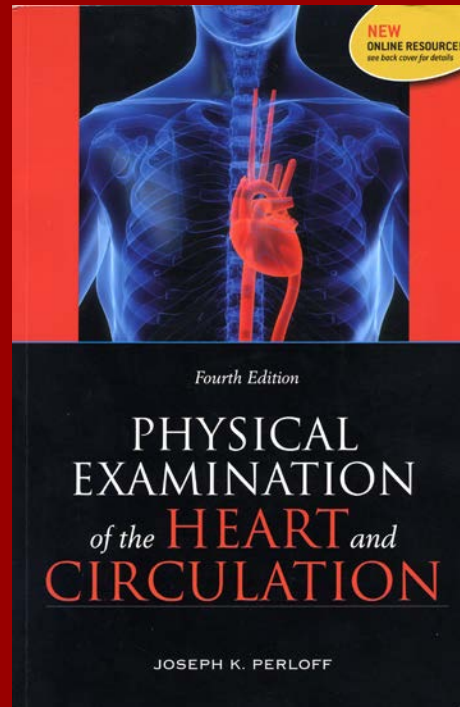


1982



2009





Chapter 4

The Jugular and Peripheral Veins

Examining the Jugular Vein

Physical Examination of the Heart and Circulation

Physical appearance

Arterial pulse

Jugular venous pulse

Precordial percussion and palpation

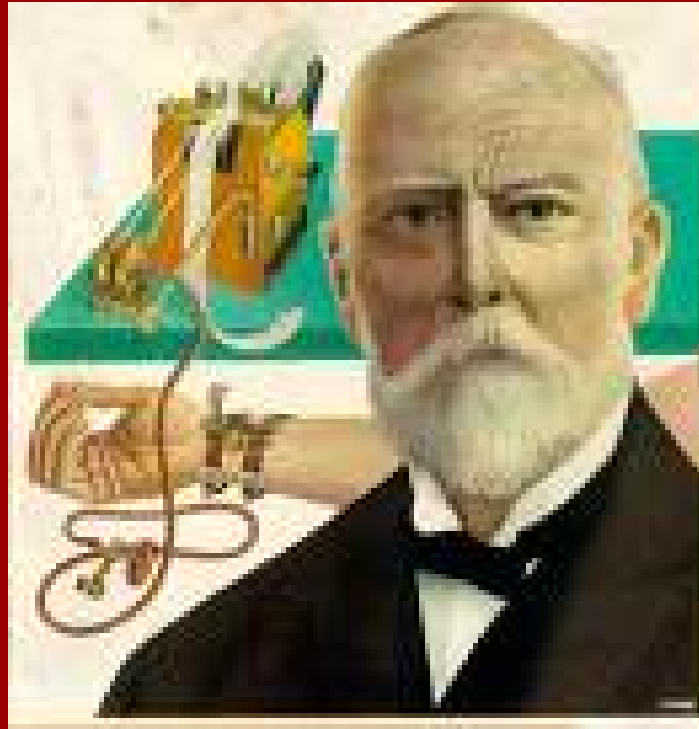
Auscultation

Chest and abdomen

Coexisting noncardiac diseases

*Examination of the
Jugular Vein
Is Never in Vein*

Internal and external jugular veins are sources of anatomic, hemodynamic and electrophysiologic information within the chambers of the heart--the right atrium and right ventricle.



Sir James Mackenzie

Born 1853 Scone Scotland

**Simultaneous records of the
arterial and jugular venous pulse**

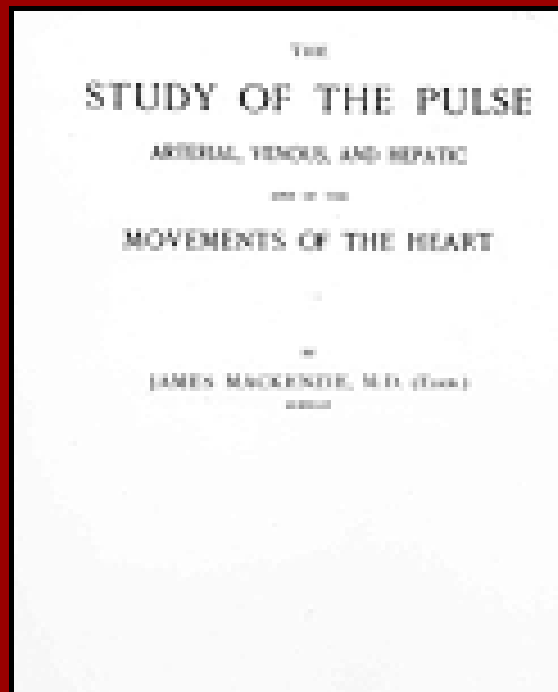
In 1902, Sir James Mackenzie established the jugular venous pulse as an important part of the cardiovascular physical examination.

“We come now to the study of a subject which gives far more information of what is actually going on within the chambers of the heart. In the venous pulse we have often the direct means of observing the effects of the systole and diastole of the right auricle, and of the systole and diastole of the right ventricle.”

Mackenzie's Polygraph 1910



James Mackenzie
The Study of the Pulse,
Arterial, Venous and Hepatic
and of the
Movements of the Heart
Edinburgh, Young & Pentland
1902



Information from the Jugular Venous Pulse

- 1) Waveform and pressure
- 2) Anatomic and physiologic inferences
- 3) Arrhythmias and conduction defects.

External Jugular Vein





The trunk should be elevated above the horizontal to an angle that coincides with the maximum excursions of the A and V waves of the internal jugular vein.



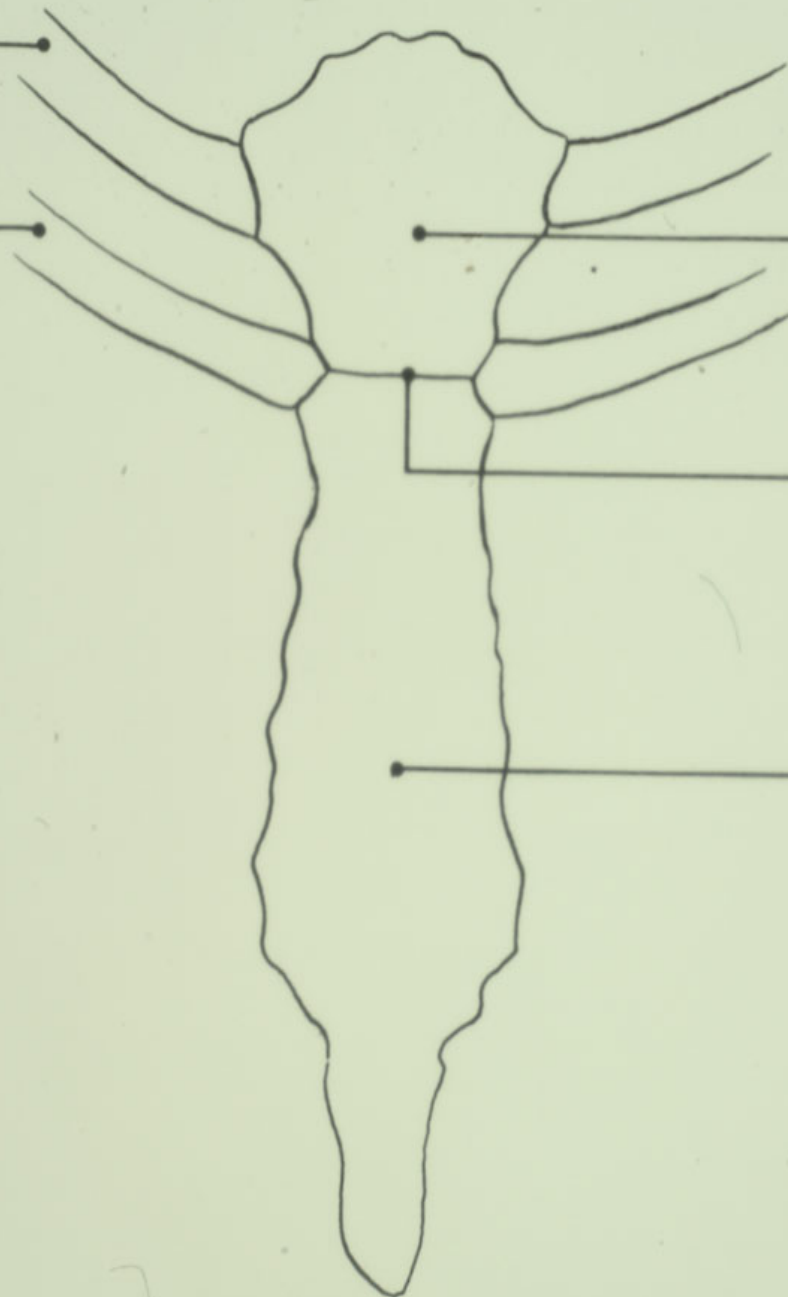
1st Rib —•

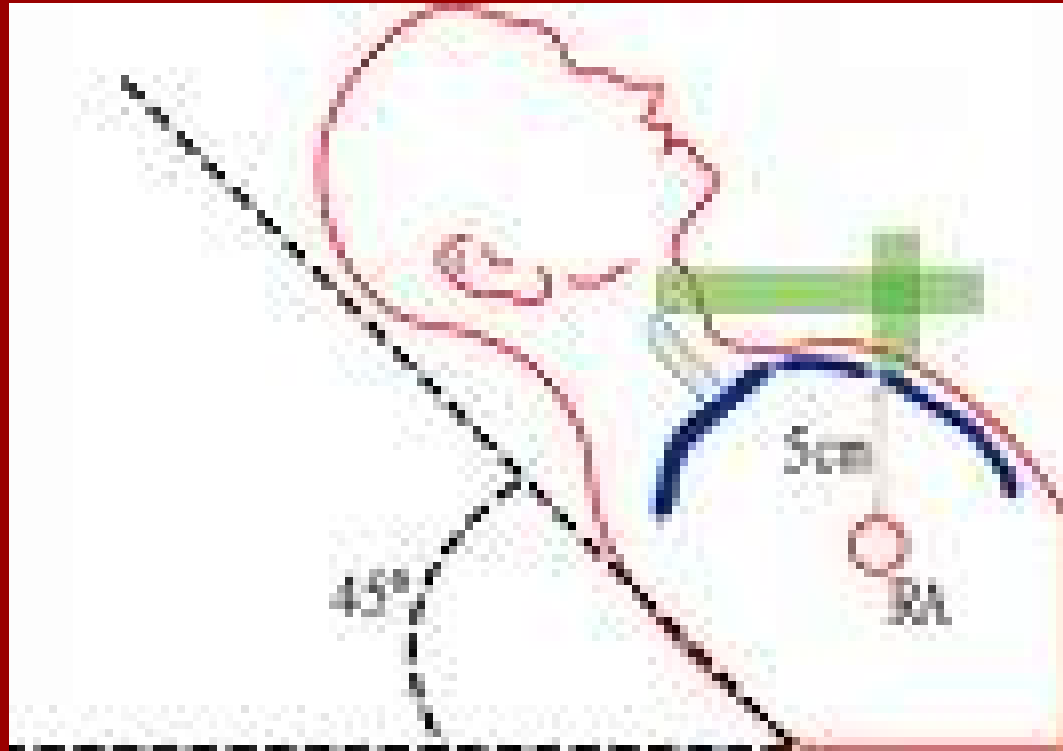
2nd Rib —•

Manubrium

Angle of Louis

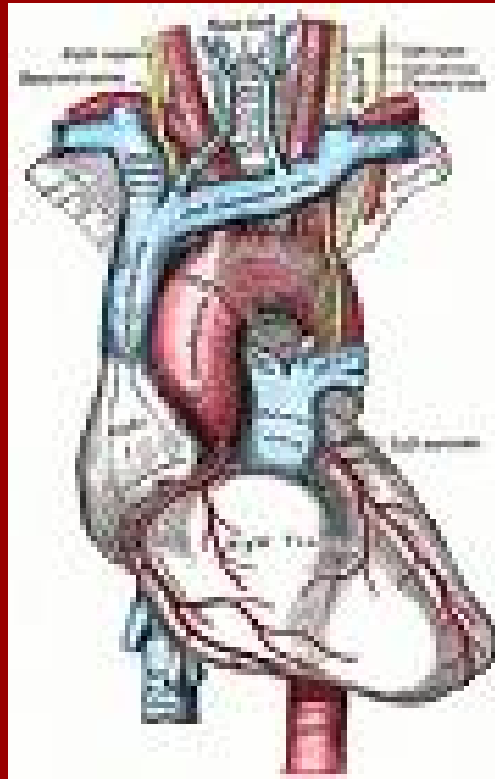
Body



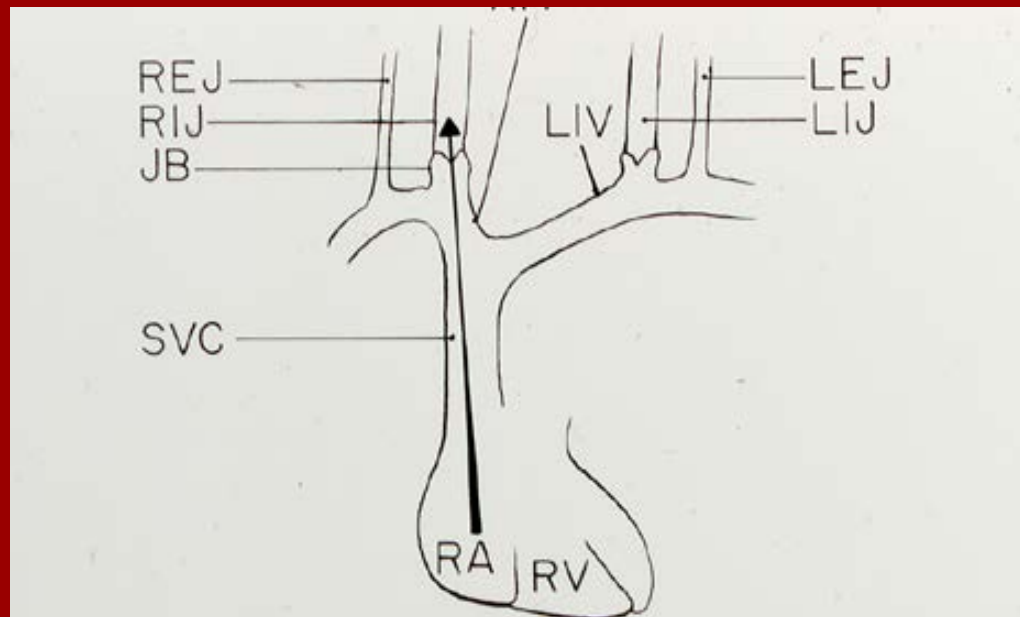


**Centimeters Above the
Sternal Angle**

Internal Jugular Right/Atrial Connection



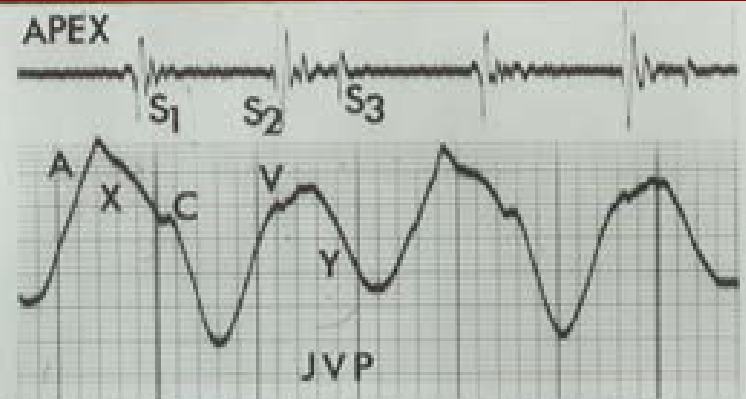
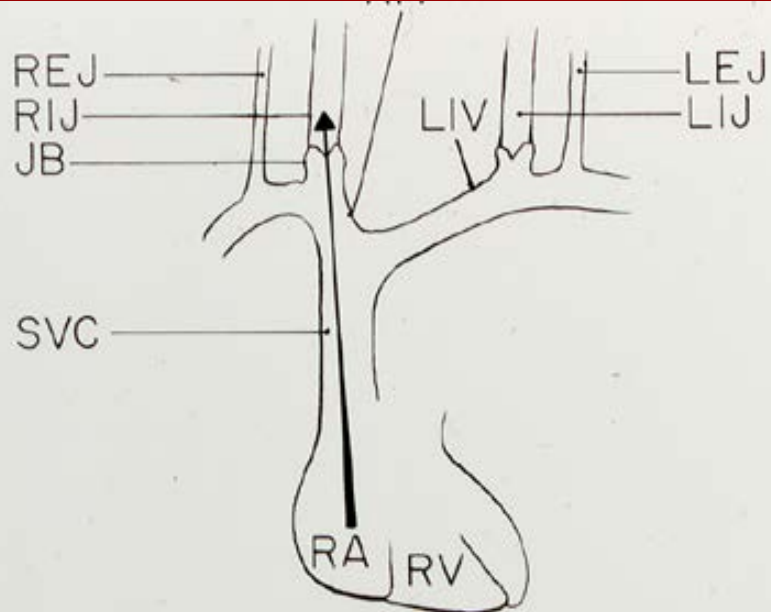
Internal Jugular/Right Atrial Connection



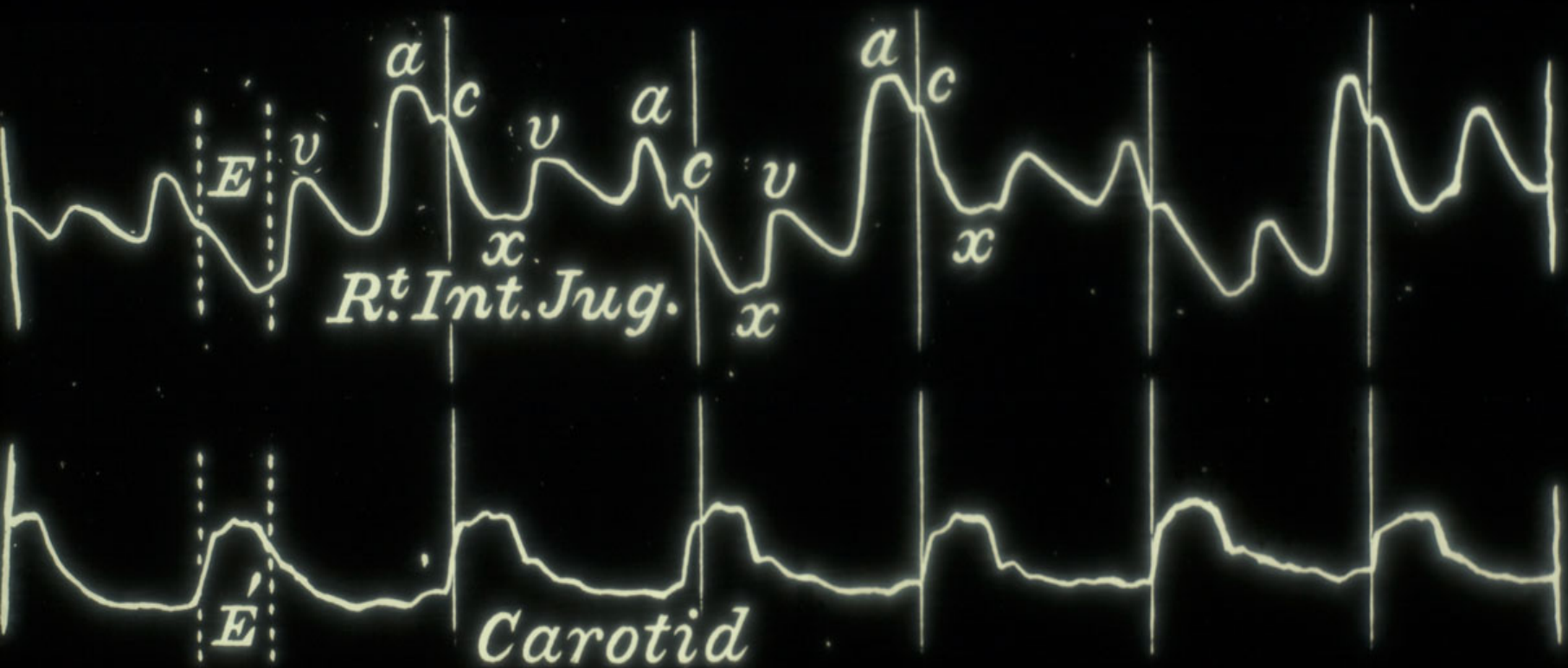


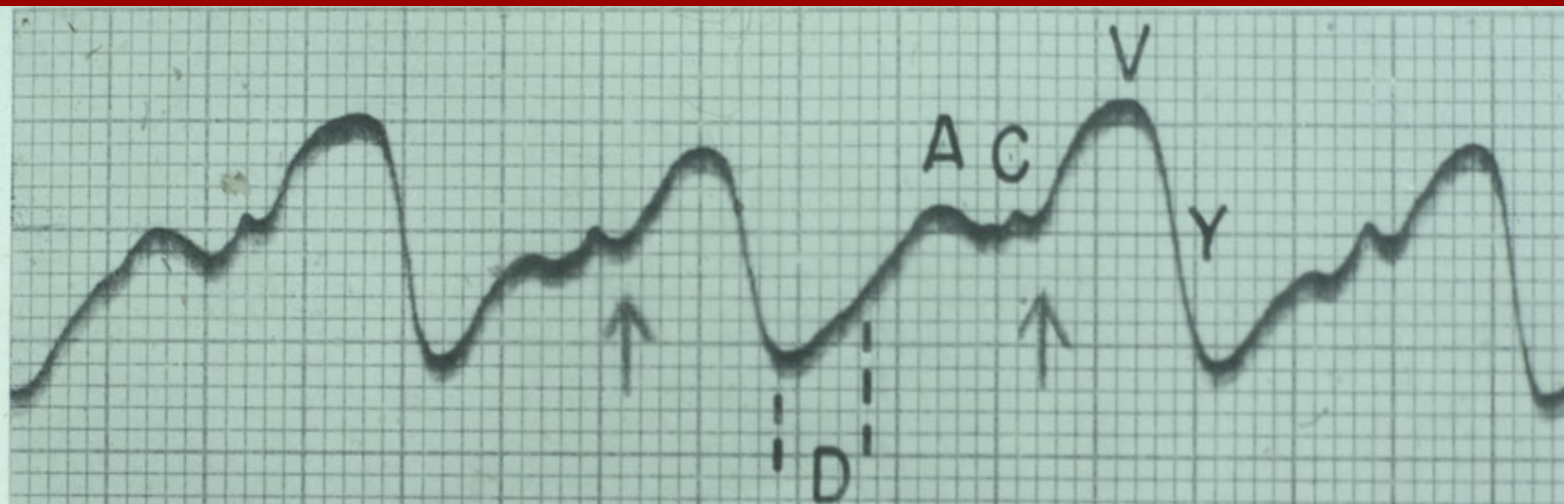
Sternocleidomastoid



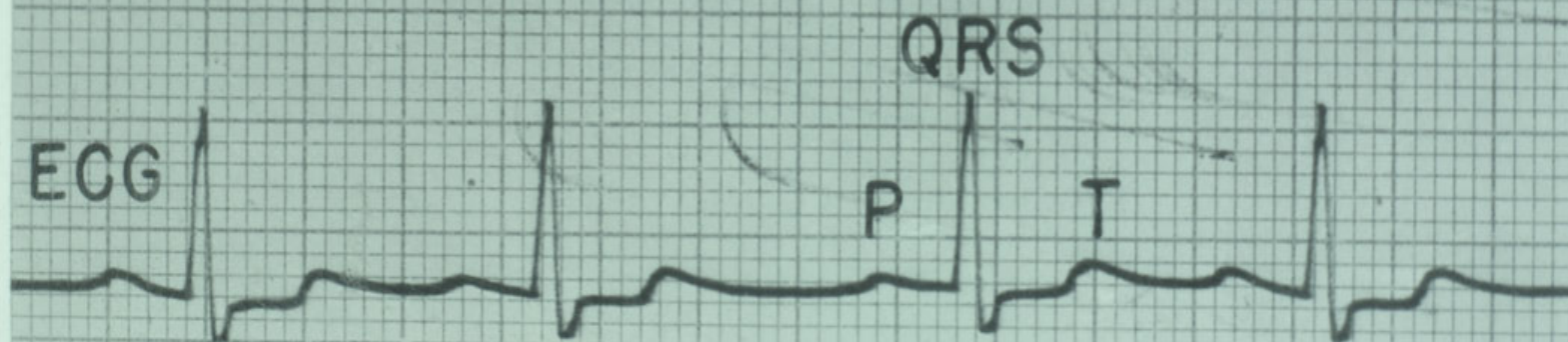


Normal JVP & Carotid Mackenzie

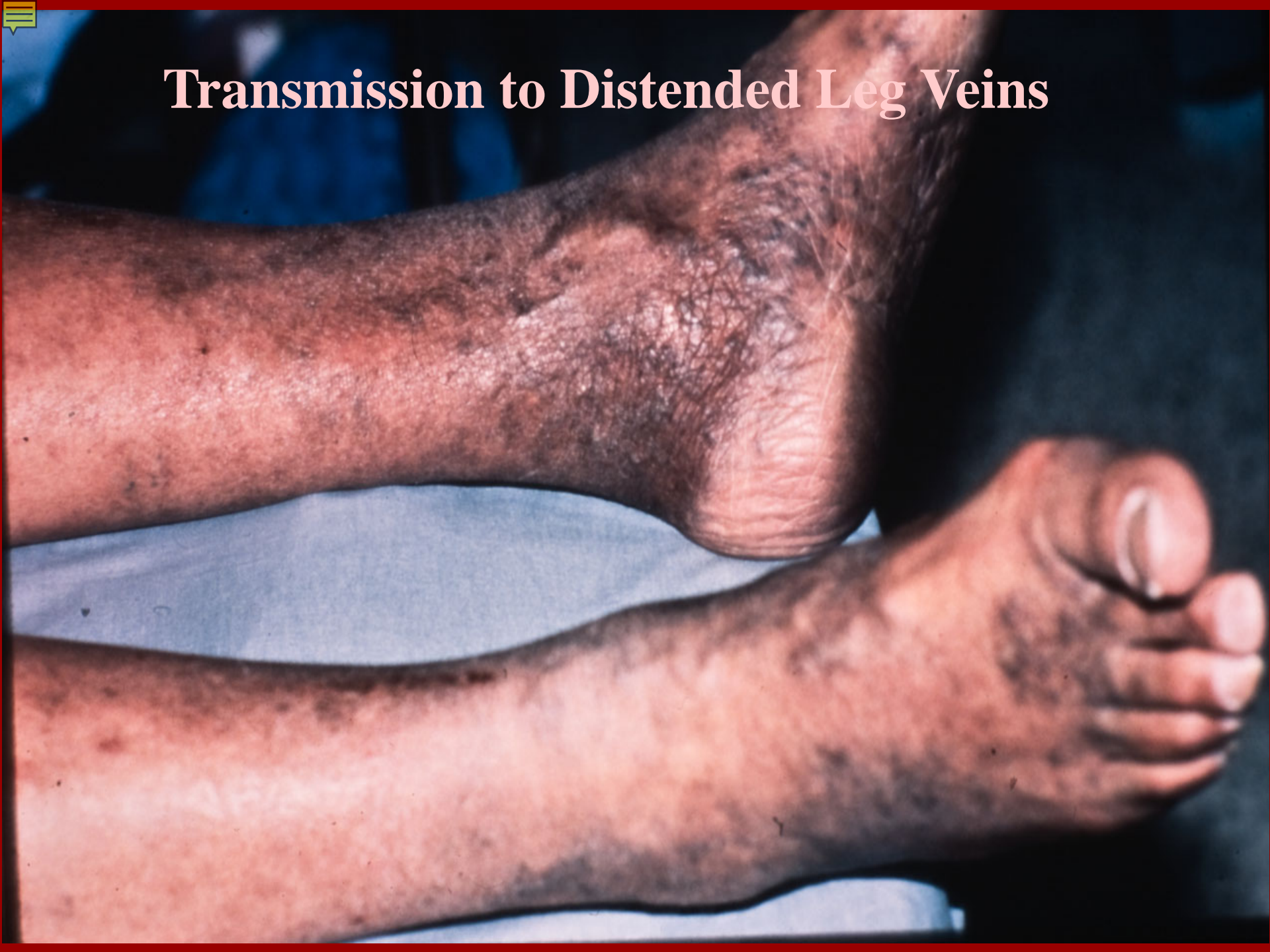




RIGHT ATRIUM
TRICUSPID INSUF.

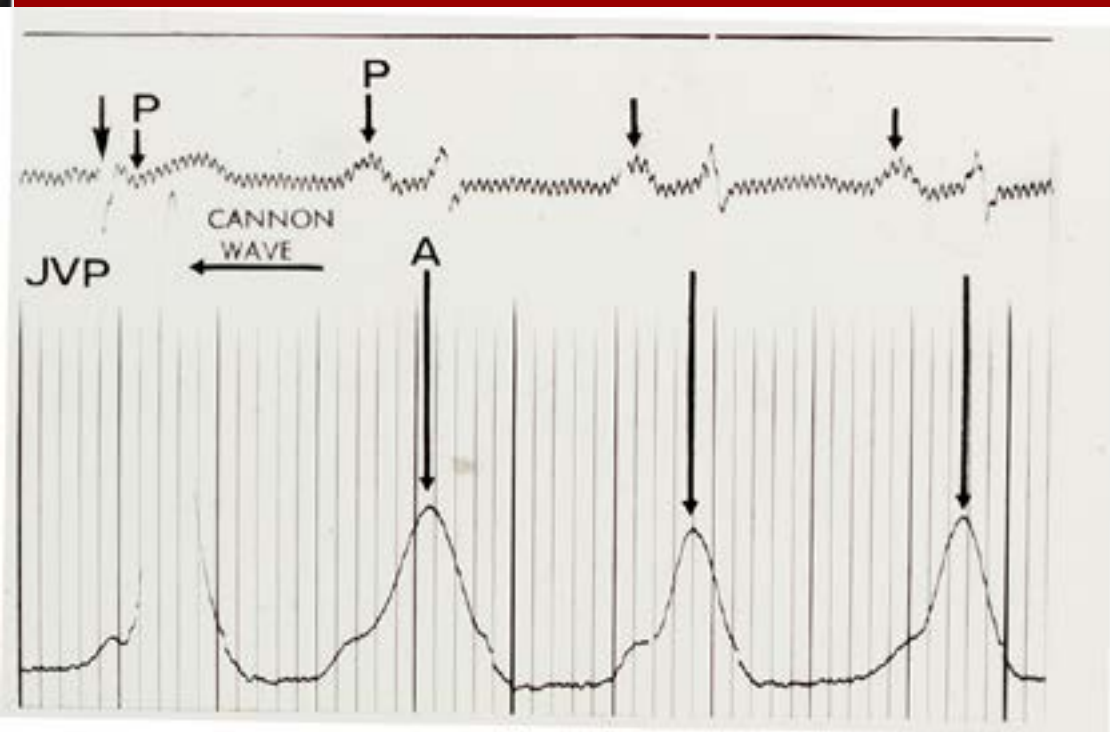
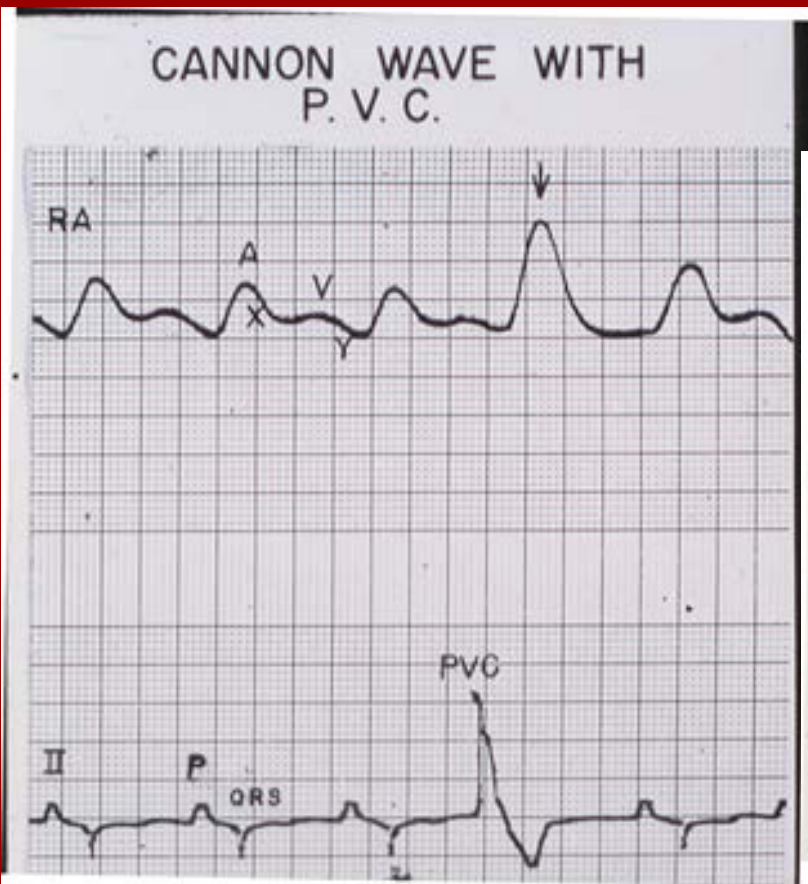


Transmission to Distended Leg Veins



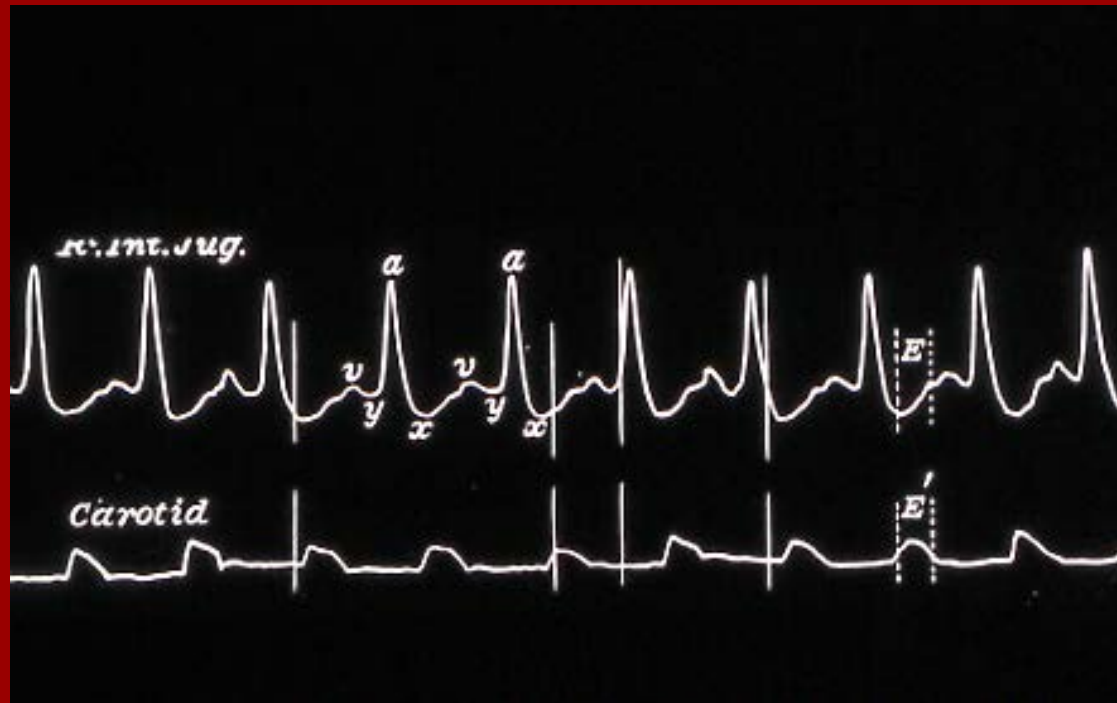
Cannon Waves

Junctional Beat

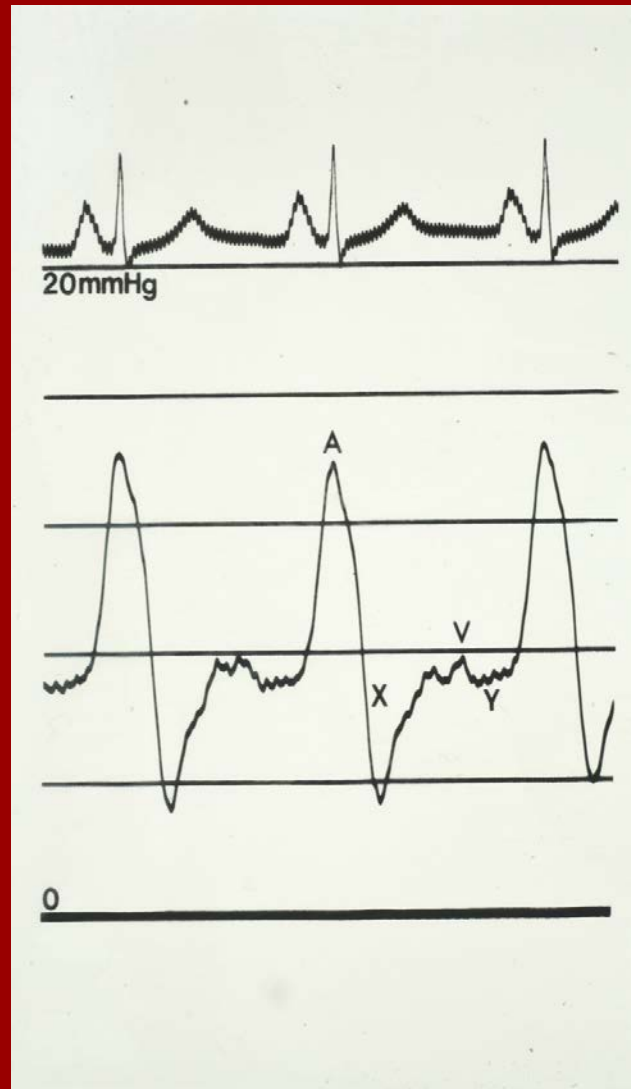


Giant A Wave

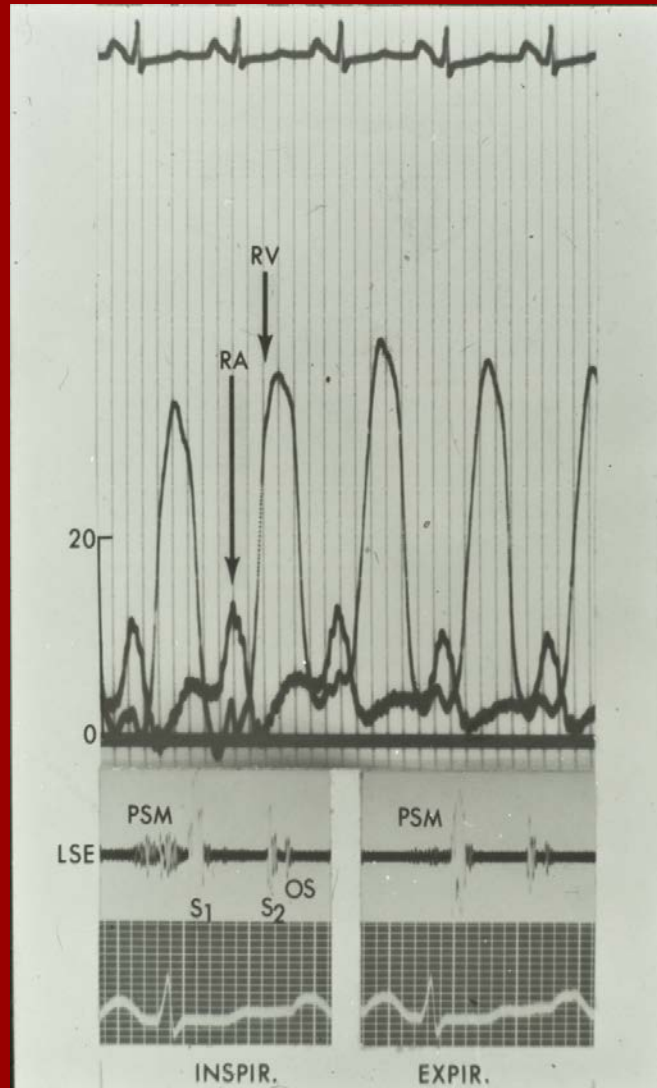
Mackenzie



A Story From Paul Wood's Clinic



Tricuspid Stenosis



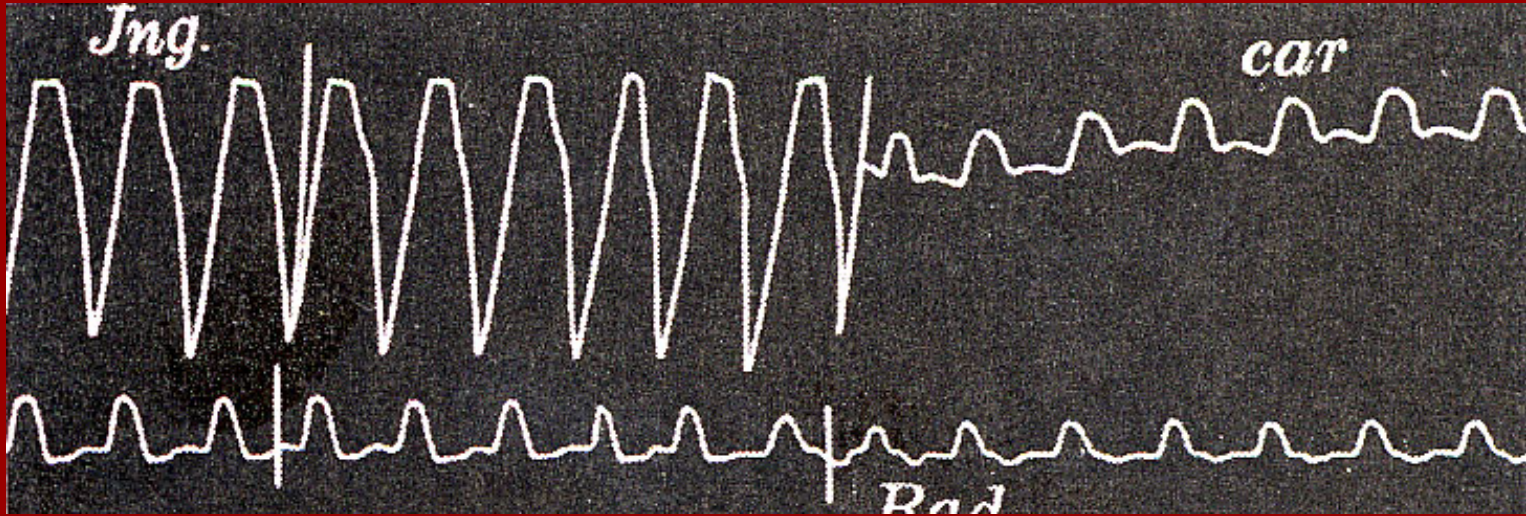
"I had been endeavoring to discriminate between the different forms of irregular heart action, and it occurred to me to employ the jugular pulse as an aid. By this means I was able to separate the great majority of irregularities into definite groups, according to the mechanism of their production, as revealed by simultaneous records of the jugular and radial pulses."

James Mackenzie

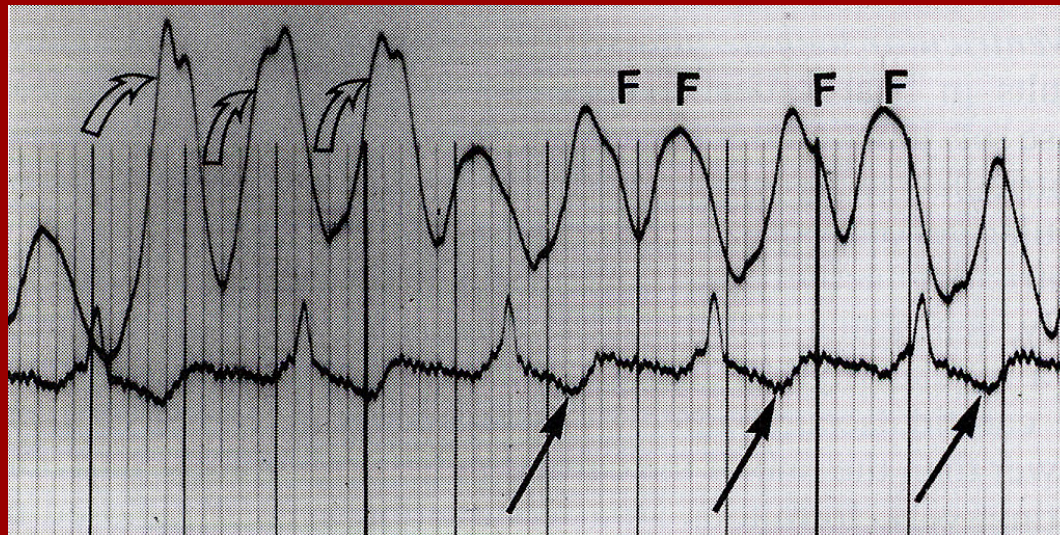
ARRHYTHMIAS THAT CAN BE RECOGNIZED IN THE JUGULAR VENOUS PULSE

- 1) SINUS BRADYCARDIA
- 2) SINUS ARRHYTHMIA
- 3) ECTOPIC OR PREMATURE BEATS (ATRIAL, JUNCTIONAL, VENTRICULAR)
- 4) ECTOPIC TACHYCARDIAS OR ECTOPIC RHYTHMS (ATRIAL, JUNCTIONAL, VENTRICULAR)
- 5) LOSS OF COORDINATED ATRIAL ACTIVITY (ATRIAL FIBRILLATION)

Ventricular Tachycardia



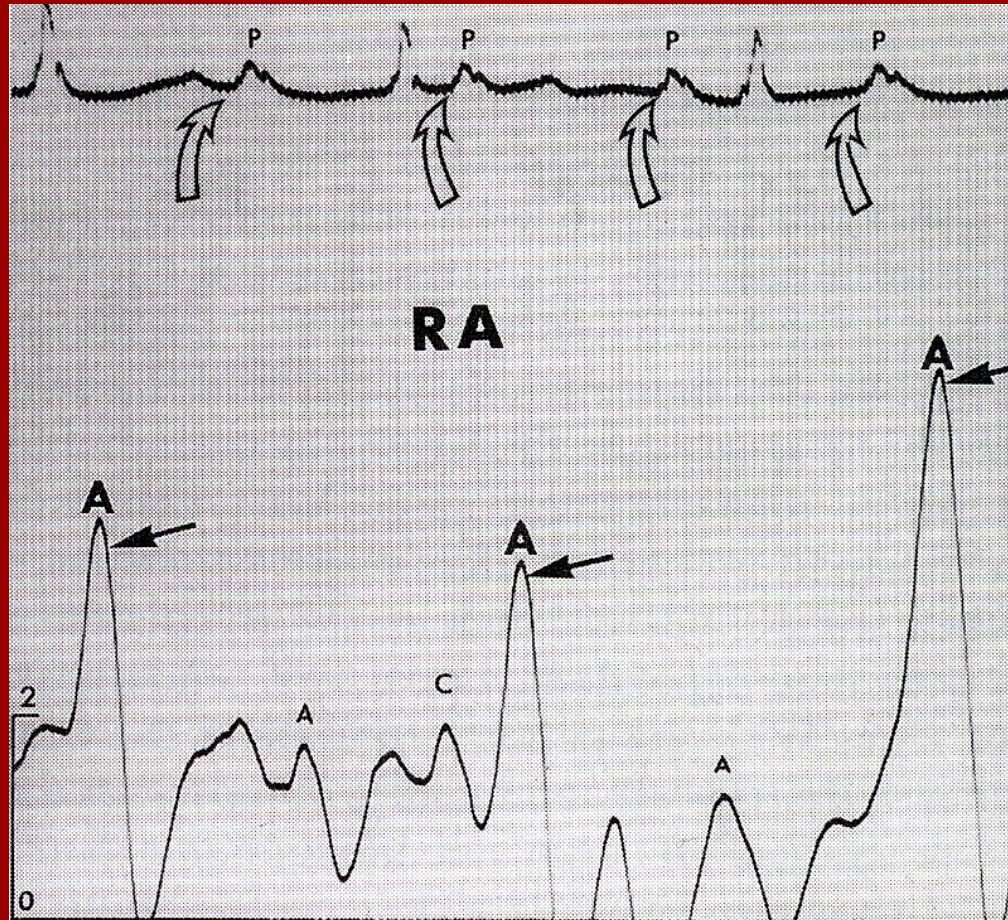
Atrial Flutter



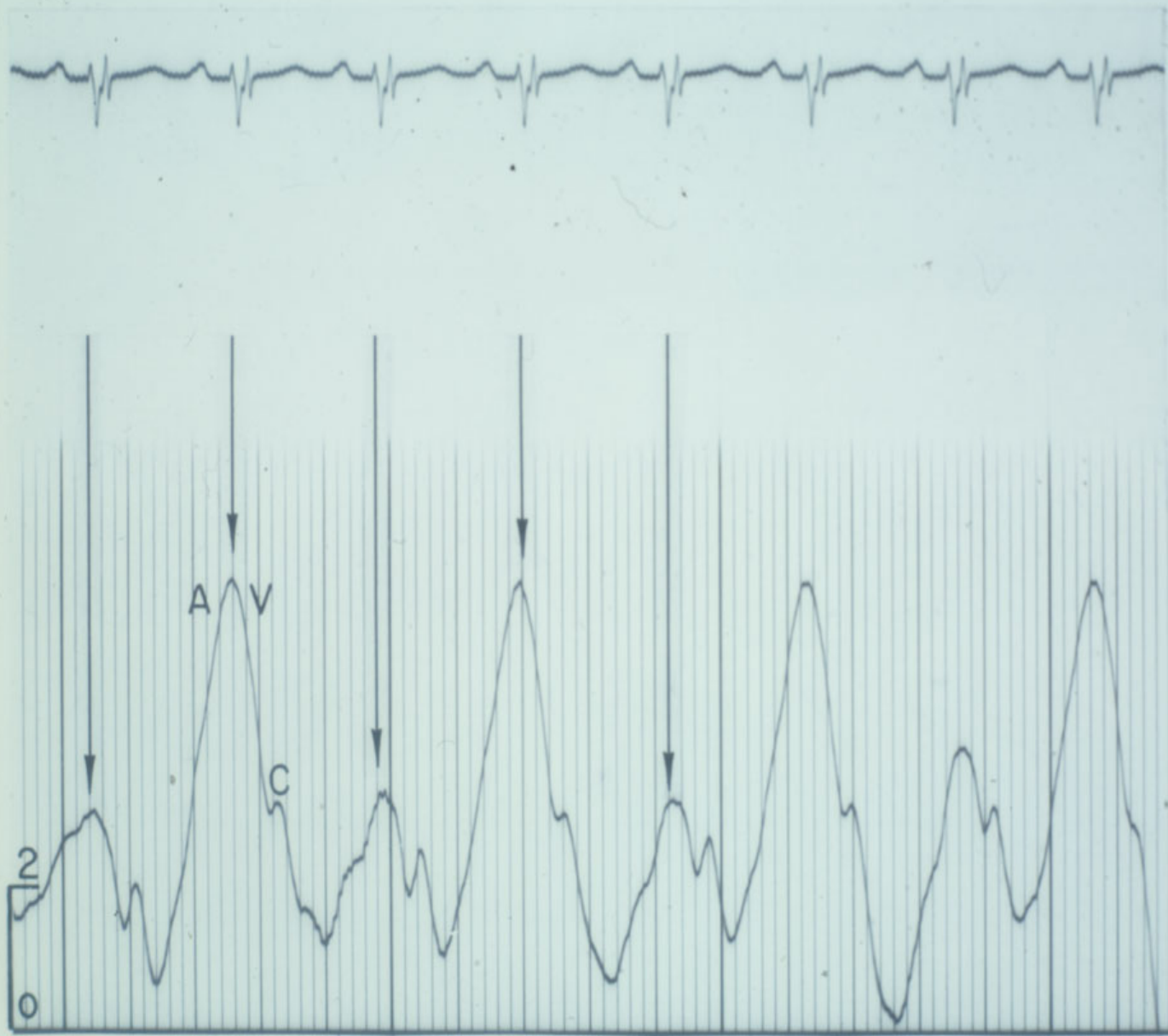
2/1 Heart Block



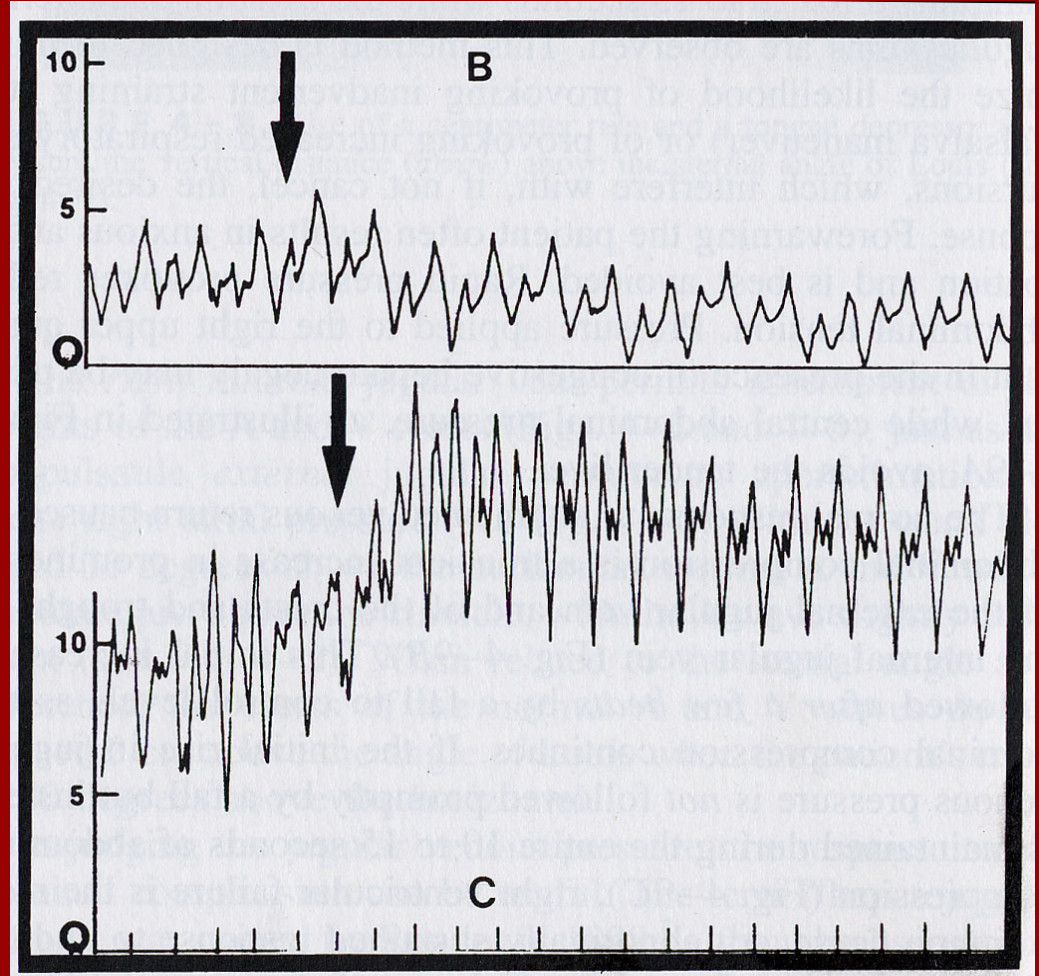
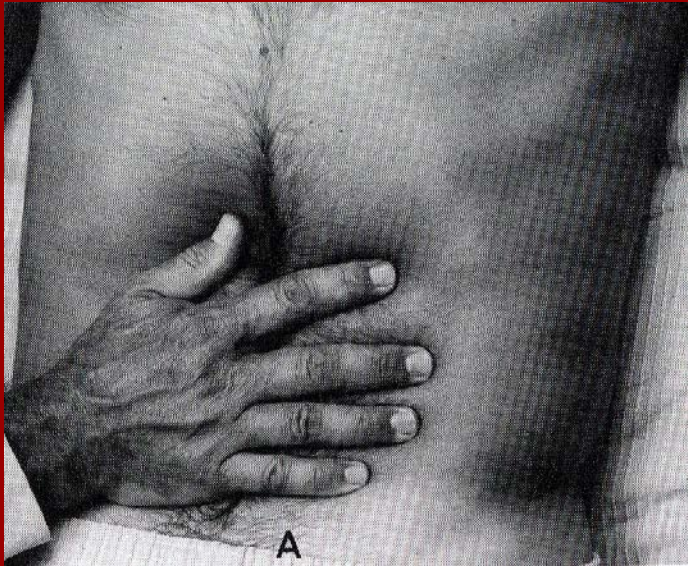
Complete Heart Block



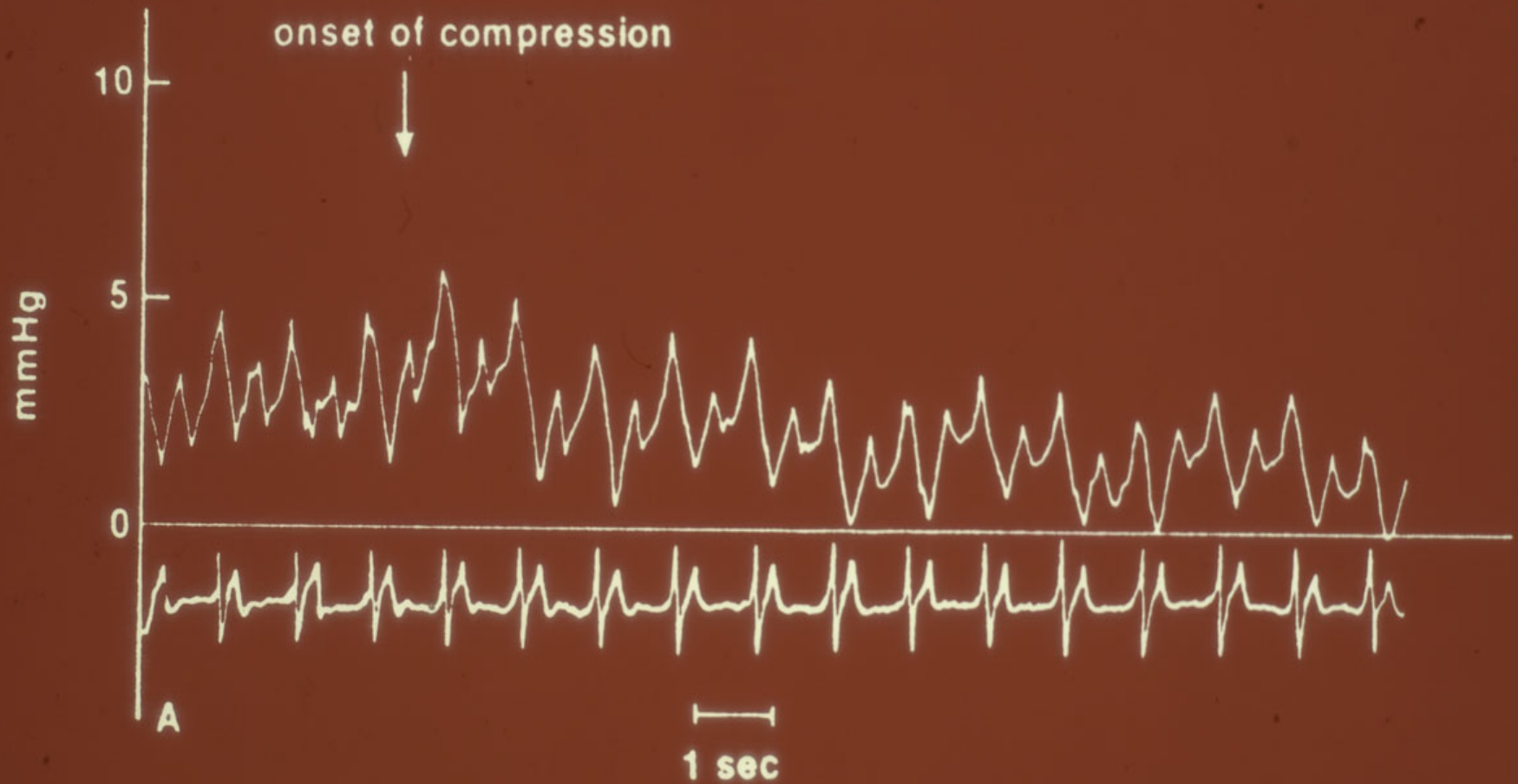
RT. ATRIAL ALTERNANS



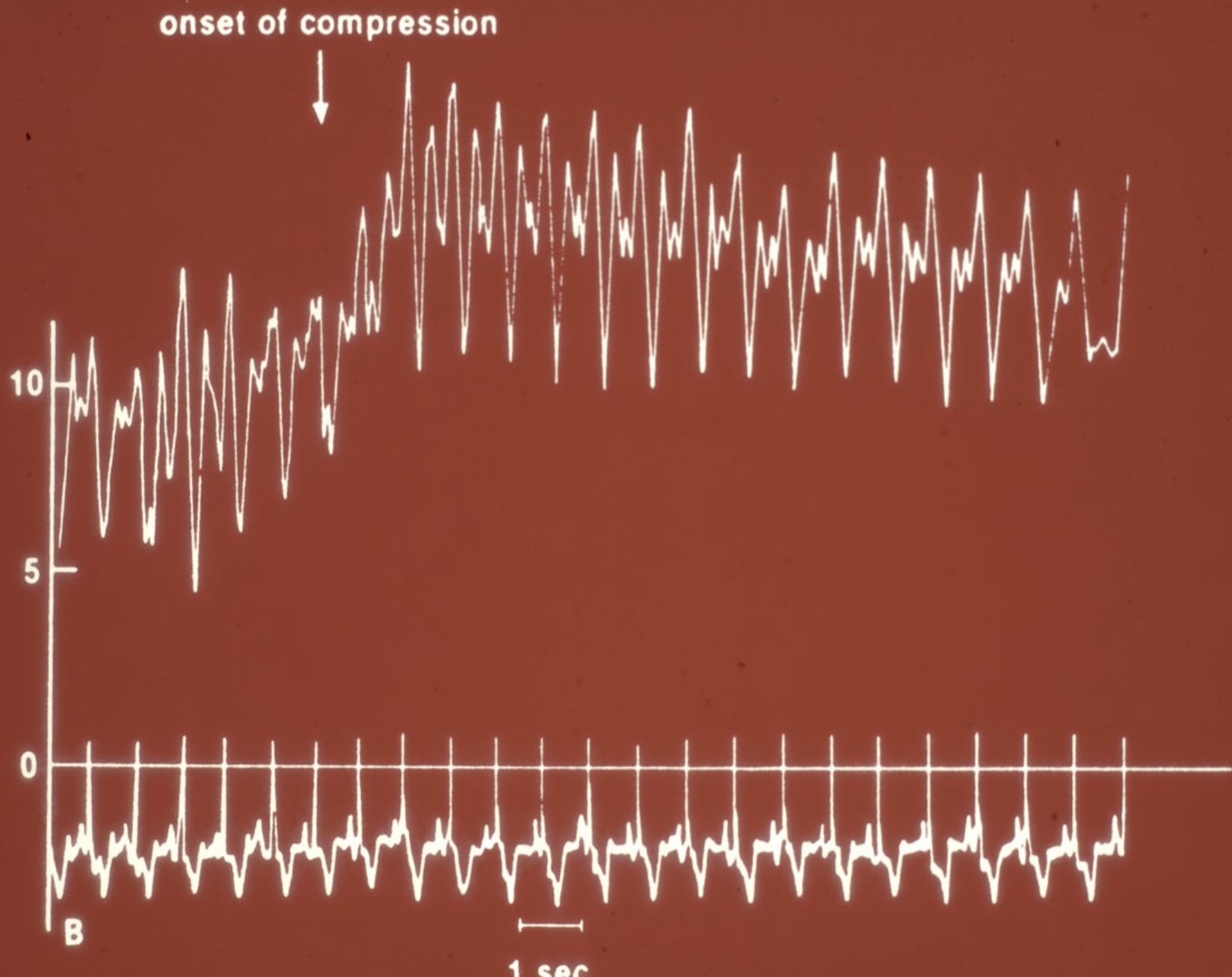
Abdomino-Jugular Reflux



Normal Response



Abnormal Response



Kaussmaul's Sign

Jugular Venous Pressure Rises With Inspiration



Chronic Constrictive Pericarditis

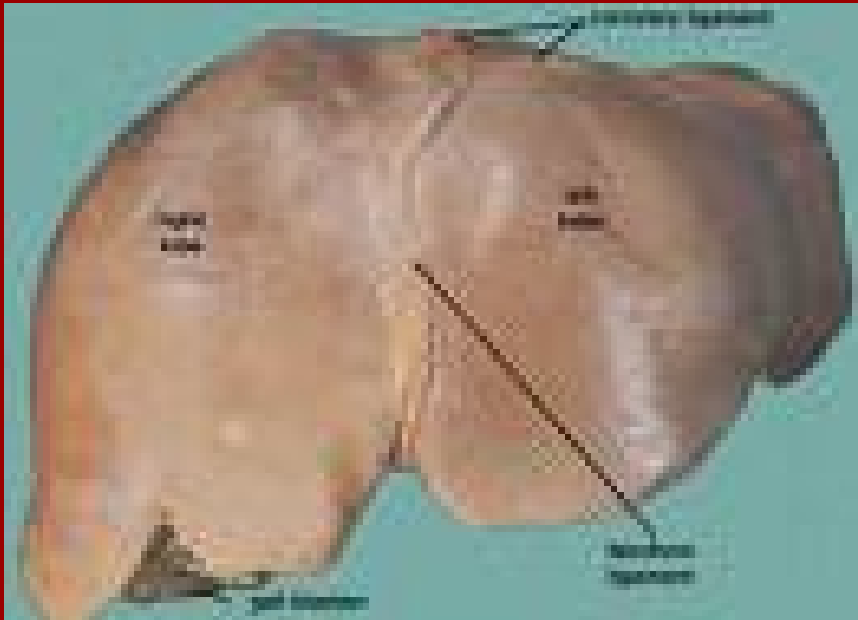


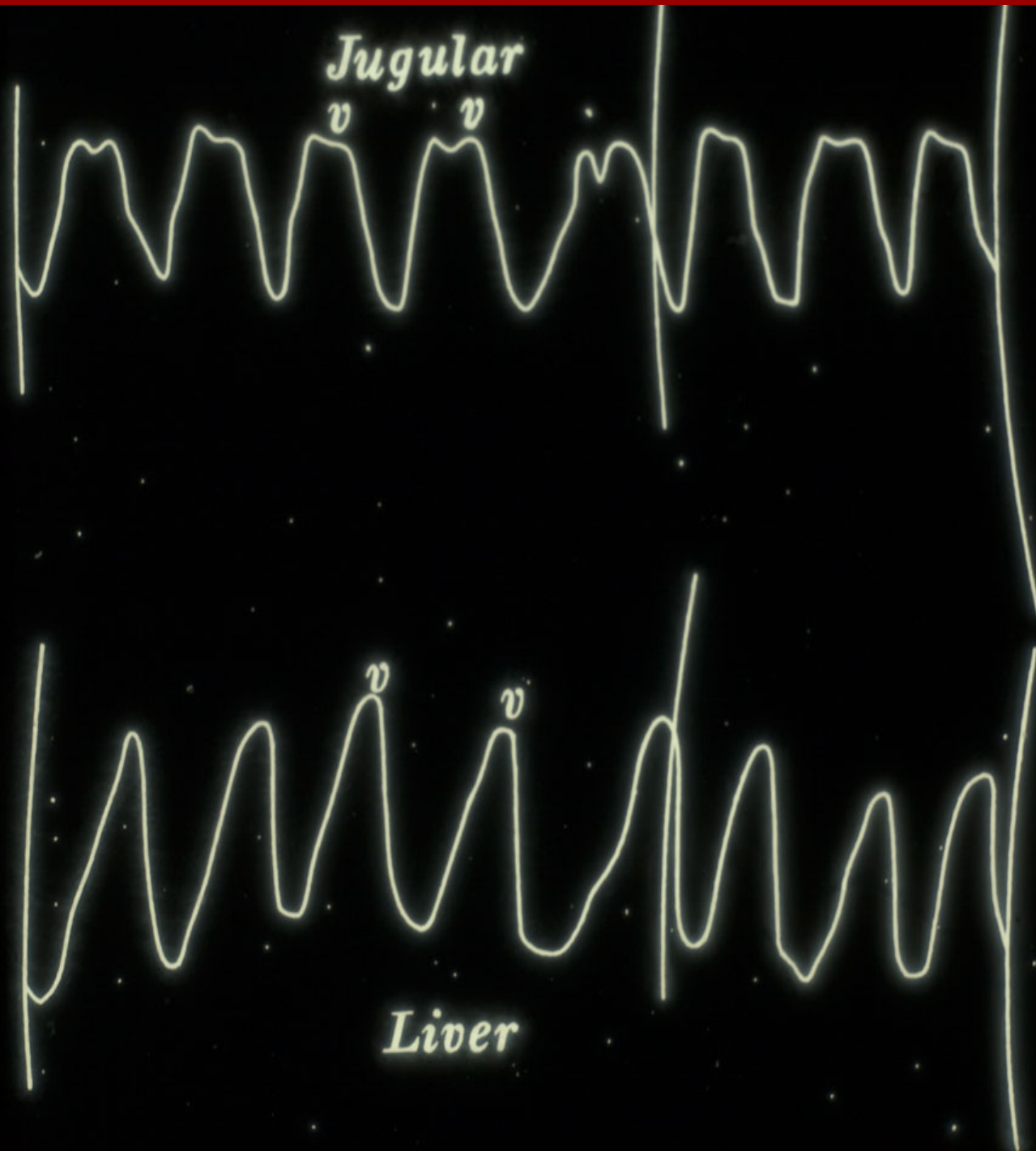
High Nonpulsatile A and V Crests Punctuated by
Rapid X and Y Descents

**The changes in the
volume of the liver offer a most instructive
indication of the condition of the circulation.**

James Mackenzie
Chapter XXI
Pulsation of the Liver

Examination of the Liver

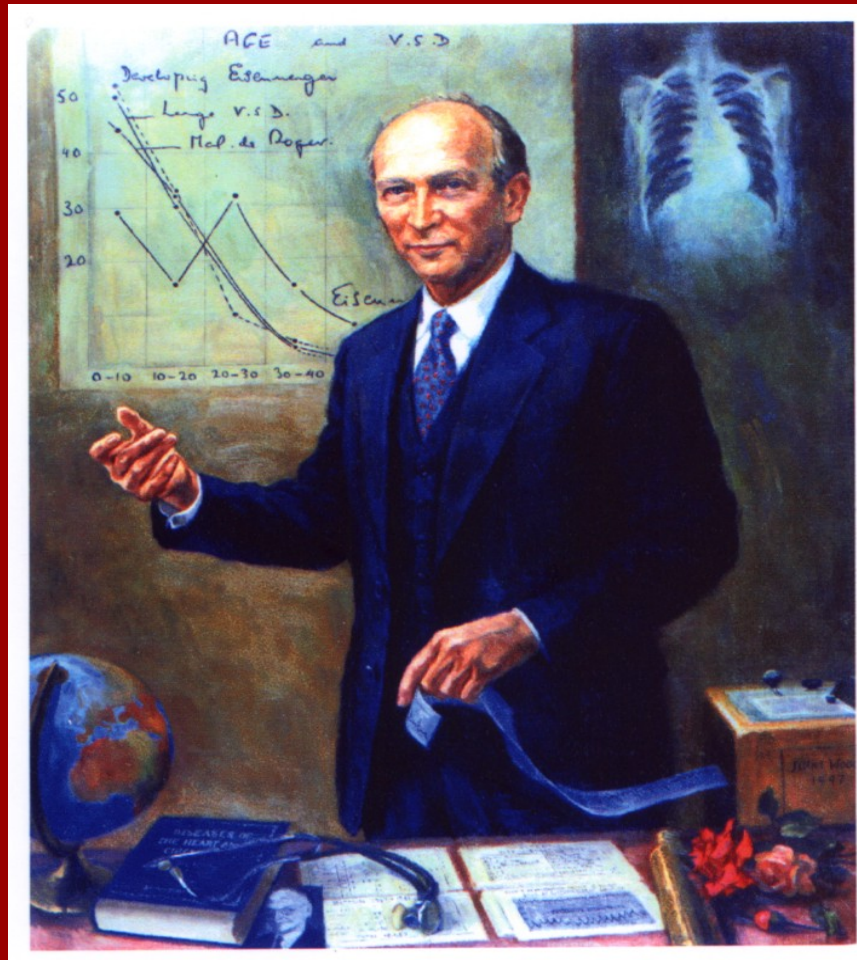




Paul Hamilton Wood
Director
Institute of Cardiology
London



1956



Paul Wood
Portrait by his daughter,
Juliet



DISEASES OF THE HEART AND CIRCULATION

by

PAUL WOOD, O.B.E.

M.D. (Melbourne), F.R.C.P. (London)

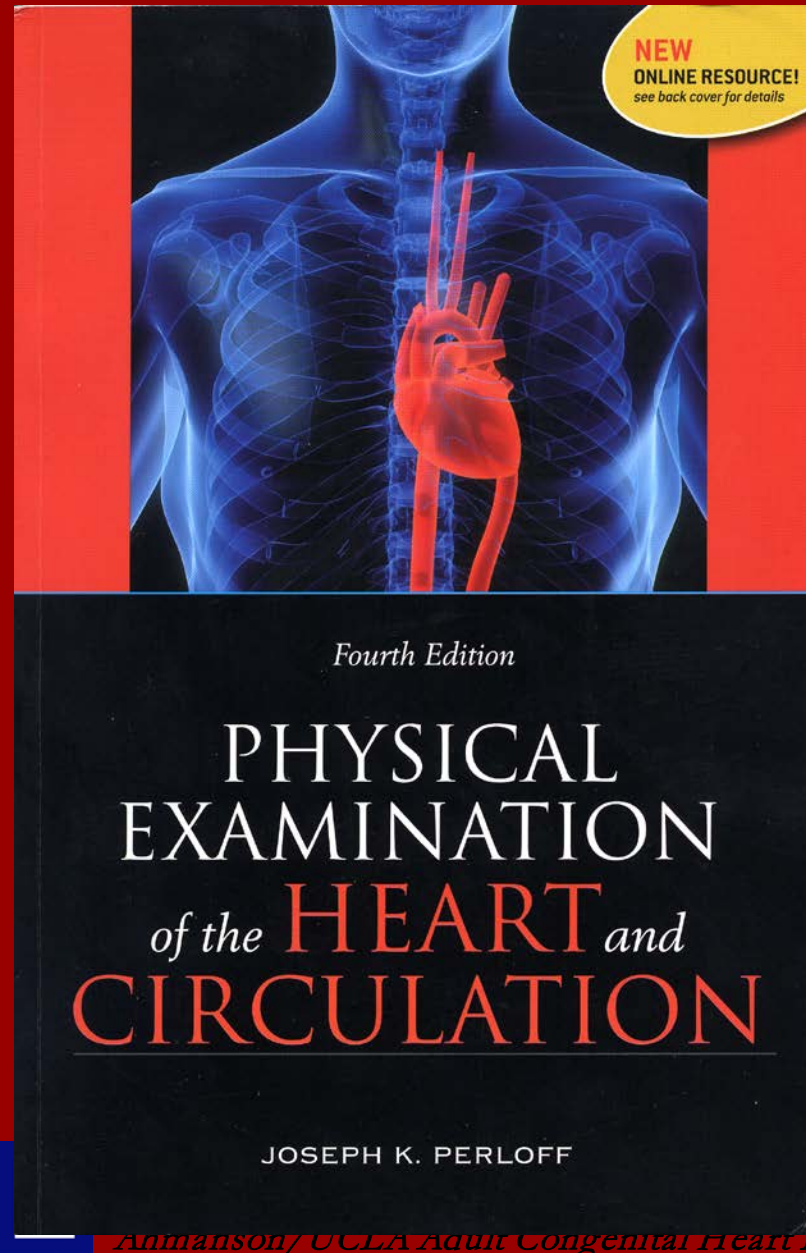
Director, Institute of Cardiology, London

Physician, National Heart Hospital

Physician in charge of the Cardiac Department, Brompton Hospital

CHAPTER II. PHYSICAL SIGNS

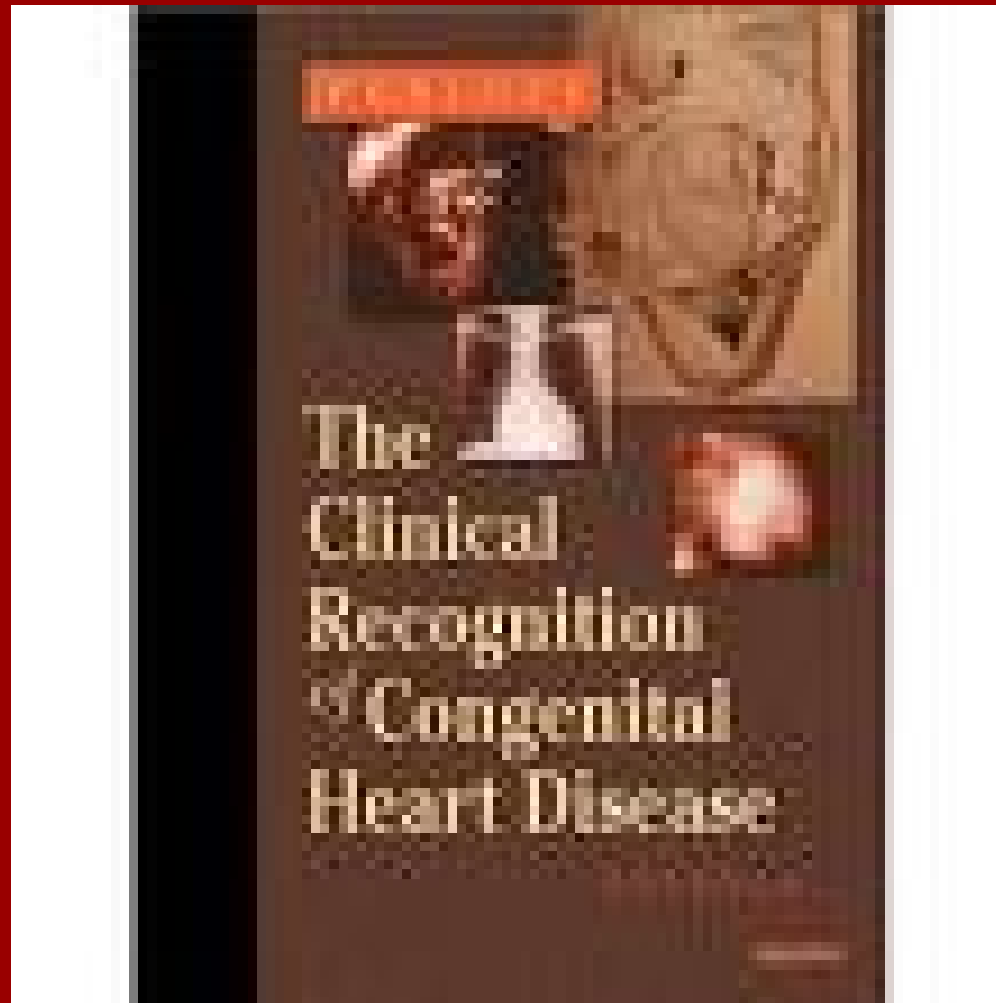
CHAPTER VIII. CONGENITAL HEART DISEASE



To the memory of
PAUL HAMILTON WOOD
from whom I learned
the physical examination
of the heart and
circulation.

London
1954-55

To Paul Wood From Whom I Learned Congenital Heart Disease



Wellcome Foundation Audiovisual Tape:
The Jugular Venous Pulse.

Commentary
written and spoken by Paul Wood 1957.

Paul Wood Audio Visual Tape

Ritual Examination of the Liver

1900 to 1600 BCE



Normal JVP & Carotid

