

## 3RD CLASS.

## VOLUNTARY.

## PERMANENT FORTIFICATION.

## SECTION E OF OBLIGATORY COURSE—

Sub-sections *d, f, g* and *h*, in greater detail.

## THE AMENDED BASTIONED SYSTEMS—

Chasseloup, Dufour and Choumara.

## COAST DEFENCE.

## A. INTRODUCTORY—

Principles unaltered.

Considerations which influence the modifications in detail, characteristic of coast defences.

Considerations which influence the selection of the points to be defended. Sketch of methods of attack to which such defences are liable.

Requirements and means of carrying them out.

*a.* By special arrangement of batteries—site.

*b.* By constructive details for protection of guns and facilitating their service.

*c.* By utilization of natural obstacles and creation of artificial ones.

## B. COMBINATION OF THESE PRINCIPLES IN WORKS FOR COAST DEFENCE—

Nature of defences :

*a.* Batteries.

*b.* Obstructions.

*c.* Submarine mines.

*a.* Batteries.—Requirements, and how fulfilled for the following:—

*α.* Earthen batteries with or without Moncrief carriages.

*β.* do do with iron submarine shields;

*γ.* Casemated batteries with do do

*δ.* Iron fronted batteries fixed or revolving.

Situations in which these batteries are suitable, respectively.

*b.* Obstructions.—Requirements and how fulfilled for the following:—

*α.* Sunken obstructions.

*β.* Floating do

Situations in which they are suitable, respectively :

*c.* Submarine Mines.—Requirements and how fulfilled for the following:—

*α.* Defensive.

1. Mechanical.

2. Electrical.

Situations in which they are suitable, respectively. Attack on submarine mines. (For explosive used, see Explosives) :

*β.* Offensive (Torpedoes.)

1. Locomotive.

2. Outrigger.

3. Towing.

Brief sketch of the use of torpedoes.

General discussion on method of defending coasts by the combination of the above.

## C. GENERAL MILITARY OPERATIONS FOR THE DEFENCE OF COASTS—

Plates.—VII, VIII, IX. Coast Defences.

Fair Notes.—On lectures during the term.