

PART III.

SECTION I.

PRINCIPLES OF GUNNERY.

DEFINITIONS.

Matter.—The substance of which bodies are composed, may be solid liquid or gaseous and imponderable.

Body.—Any definite portion of matter perceptible by our senses, or which may act or be acted upon by other bodies.

Particle.—An atom or a point so minute as to be indivisible.

Mass.—The quantity of matter in a body, it is estimated by weight.

Cohesion.—The force which holds together the particles of a body; without cohesion a stone would be dust.

Volume or Bulk.—The space a body occupies.

Figure.—The form or shape of a body, thus a round shot and a cylindro-conoidal rifle projectile may have the same volume, but have entirely different figures.

Density.—The closeness of the particles of any body, or the quantity of matter in any given bulk.

Elasticity.—An inherent property in bodies by which they recover wholly or partially their former figure or state, after the removal of external pressure tension or distortion.

Inertia.—A property of matter by which it cannot of itself put itself in motion, or if in motion, has no power within itself to alter the direction or extent of its motion.

Motion.—The passing of a body from one place to another.

Velocity.—The degree of swiftness with which a body moves over a certain space in a certain time, it is uniform when moving over equal spaces in equal periods of time, variable when moving over unequal spaces in equal time, it is accelerated when moving over greater spaces in each equal successive portion of time, retarded when moving over a less space in each equal successive portion of time.

Initial Velocity.—The velocity at the instant of departure of the projectile from the bore.

Terminal Velocity.—If a body be allowed to fall in the atmosphere there is a certain limit to the velocity it will acquire, this is attained