

## INTRODUCTION

SINCE time immemorial man has sought to travel faster than his fellow man. This inborn human urge gained tremendous impetus some 60 years ago with the introduction of the petrol engine as a practical proposition for vehicle propulsion. Inevitably, users of the new form of transport felt their competitive instincts aroused. Their demands for more power and more miles per hour were met initially by the simple expedient of fitting larger and still larger engines. In this "brute force" era, in which sheer volume counted for more than volumetric efficiency, the results of hit-or-miss experiments were all too obvious, the scientific reasons for those results all too seldom understood.

Clearly a halt had to be called to this "Frankenstein's Monster" method of progression. With a growing understanding of basic principles in internal-combustion power production, allied with practical experiments on the road, designers turned their attention to obtaining increased performance from engines of more moderate cubic capacity. So far as motorcycles were concerned, this more scientific form of development was encouraged by the introduction of the Isle of Man Tourist Trophy Races with their strict limitation of engine sizes. This second era was one in which the observant mechanically-minded amateur rider sometimes discovered a "secret of tune" which enabled him for a time to score over his professional rivals.

With advances in metallurgy and a complete appreciation of basic principles, the point has now been reached in this, the third era, where there are no longer any "secrets". Science has replaced brute force and guesswork. Success in international events depends upon the combined efforts of the designer and development engineer, plus a host of specialist technicians responsible for ancillary equipment.