a deaf car, confident in the knowledge that the best way of assisting his sorely-pressed troops is by a vigorous blow at his enemy’s weakest spot. Hence it follows that the force which is to deliver the blow must be kept perfectly distinct from the local reserves under subordinate commanders, which are held in readiness to strengthen weak places in the defensive line, or to deliver local counter-attacks. It also follows that this force must comprise every man who can be spared from the passive portion of the defence, and that to produce the fullest results there must be complete co-operation between the three arms.

It is here, in all probability, that cavalry will find its oppor­tunity. On the one hand, the cavalry of the attack will strive to locate the hostile reserve which is preparing to deliver a counter-attack ; failing this it will protect the flanks of its own infantry, ready to move to any threatened point and to assist with dismounted fire in repelling the advancing lines when the necessity arises. On the other hand, the cavalry of the defence will strive to conceal the movements of its own general reserve and will locate the flanks of the infantry against which the counter-attack is to be directed. The share of the artillery in this stage of the battle is sufficiently apparent, and it is obvious that the chances of success of one side or the other must depend largely upon the skill and self-sacrifice of the gunners. Should the commander of the defence, aided by his cavalry, have been successful in effecting a surprise, his chances of victory will he further increased if his infantry is supported closely by the artillery. Much also must depend upon the handling of the artillery which has suddenly been thrown upon the defensive. If the battery leaders are quick to realize the changed situation and to pick up new targets, perhaps leaving covered positions and firing over the sights, all may yet be well; but it is certain that if the surprise has really been complete the infantry will require all the assistance it can possibly derive from the other arms in order to avert defeat.

One more point remains to be noted. Since the object of tactics is to win battles, every effort should be directed to that single end. If certain formations are adopted with a view to avoiding losses, it must only be in order that more men may he brought up to the decisive point. The same principle holds good with regard to what are known as holding, or secondary, attacks whose rôle is frequently misunderstood. Indeed the names themselves are misleading, for they inevitably convey the impression that the duty of winning has been entrusted to some other body. For this reason the commander is apt to consider that he has fulfilled his task if he succeeds in getting to within reasonably close range of the enemy’s position, where he can remain without suffering undue loss. Far from this being the case, the fact is that against an able opponent an attack of this nature is useless, for he will very soon detect which is the real and which is the secondary attack, and unless the two are pushed with equal vigour he will disregard the one and turn all his attention to the other. It may even happen that he will be able to take troops from that portion of his line which is only threatened and place them where he is really pressed, or even utilize them in counter­attack. In such a case it may happen that the so-called “ hold­ing ” attack may itself be held by less than its own numbers, while the main attack is suffering defeat in some other quarter of the field. Here again there is much to be learnt from the past; and for the true conduct of these feint attacks we need not go outside the history of our own army. Many instances might be quoted, but none are more to the point than that of the assaulting columns at the capture of Badajoz. On that memorable occasion the British troops were divided into five columns, three of which were vainly hurled against the great breaches which had been made in the walls. But what the main assaults failed to do was accomplished by the attacks from which least had been expected; and Philippon with his gallant defenders was forced to surrender by the loss of the San Vincente bastion and the castle of San Roque, which had been considered to be impregnable. This is the spirit which must imbue the infantryman, the cavalryman, and the artilleryman alike. For

without the fighting spirit, neither generalship, formations, nor weapons can prevail. (N. M.\*)

**TADPOLE,** a term often, but wrongly, applied indiscriminately to all Batrachian larvae. It is absurd to call the larva of a newt or of a Caecilian a tadpole, nor is the free-swimming embryo of a frog as it leaves the egg a tadpole. A tadpole is the larva of a tailless Batrachian after the loss of the external gills and before the egress of the fore limbs (except in the aberrant *Xenopus)* and the resorption of the tail. What characterizes **a** tadpole is the conjoined globular head and body, so formed that it is practically impossible to discern the limit between the two, sharply set off from the more or less elongate com­pressed tail which is the organ of propulsion. In describing tadpoles, the term “ body ” is therefore used as meaning head and body. The tail consists of a fleshy muscular portion bordered above and below by membranous expansions, termed respectively the upper and lower crest, the former sometimes extending along the body.

Except in a few aberrant types, which are mentioned below, the mouth is surrounded by a much developed lip like a funnel directed downwards, and is armed with a horny beak not unlike that of a cuttle-fish. The characters offered by the circular lip are among the most important for the distinction of species. It may be entirely bordered by fleshy papillae, or these may be restricted to the sides, or to the sides and the lower border. Its inner surface is furnished with ridges beset with series of minute, bristle-like, erect, horny teeth, each of which, when strongly magnified, is seen to be formed of a column of super­posed cones, hollowed out at the base and capping each other; the summit or crown of each of these cones is expanded, spatu­late, hooked backwards, and often multicuspid. The number of these columns is very great. F. E. Schulze has counted as many as 1100 in the lip of *Pelobates fuscus.* The beak is made up of horny elements, like the labial teeth, fused together; its edge, when sufficiently magnified, is seen to be denticulate, each denticle representing the cusp of a single tooth. The gills, borne on four arches, are internal and enclosed in the branchial chambers. The arches bear on the convex outer side the delicate arborescent gills, and on the concave inner side develop a membranous septum with vermicular perforations, a special sifting or filtering contrivance through which the water absorbed by the mouth has to pass before reaching the respira­tory organs of the branchial apparatus.

The water is expelled from the branchial chambers by one or two tubes opening by one orifice in most Batrachians. This orifice is the spiraculum, which is lateral, on the left side of the body, in most tadpoles, but median, on the breast or belly, in those of the *Discoglossidae* and of some of the *Engyslomatidae.* All tadpoles are provided with more or less distinct lines of muciferous sensory crypts or canals, which stand in immediate relation to the nerve branches and are regarded as organs of a special sense possessed by aquatic vertebrates, feeling, in its broadest sense, having been admitted as their possible use, and the function of determining waves of vibration in the aqueous medium having been suggested. In addition to these lines, all tadpoles show more or less distinctly a small whitish gland in the middle of the head between the eyes, the so-called frontal gland or pineal gland, which in early stages is connected with the brain. A glandular streak extending from the nostril towards the eye is the lachrymal canal. The eyes are devoid of lids.

Owing to more or less herbivorous habits, the intestine is exceedingly elongate and much convoluted, being several times larger and of a greater calibre than after the metamorphosis. Its opening, the vent, is situated either on the middle line at the base of the tail, or on the right side, as if to balance the sinistral position of the spiraculum. The tail varies much in length and shape according to the species; sometimes it is rounded at the end, sometimes more or less acutely pointed, or even terminating in a filament. The skeleton is cartilaginous, and the skull is remarkable for the very elongate Suspensorium of the lower jaw; the tail remains in the notochordal condition,