The Formation and Tactics of Caesar’s Army

by Charles Augustus Katherman

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Formation and tactics of Caesar's army.
The Formation and Tactics of Caesar's Army.

We possess no history which treats directly on the Roman army in the time of Caesar. Polybius, a Greek historian of the second century before Christ, has given us in his history quite a complete account of the Roman army of his day. Vegetius' treatise on military art refers of course to a period much later than that of Caesar, being as he was a historian of the latter part of the fourth century; yet many details given by him are valuable illustrations of Caesar's war customs that had considerable permanence among the Romans. Then too we gain points now and then from Tacitus, who, although somewhat later than Caesar's time, was still much earlier than Vegetius.

Much of our knowledge, however, of this army must be obtained from the testimonial evidence taken from his own works, the civil and military wars. His commentaries are primarily a narration of his wars, but often by his accuracy of statement, a
truly commendable characteristic of Caesar, we are able to learn much regarding the formation and tactics of his army.

The tactical unit of a Roman army was the Legion. Caesar obtained his recruits for the most part from levies made from those provinces over which the people at Rome had been induced to make him proconsul. In B.C. 1-7 he makes a levy in Transalpine Gaul. In B.C. 1-10 he makes a levy of two legions in Cisalpine Gaul, and in B.C. 2-1 makes a similar levy from this same province. The exact manner of mustering soldiers is given by Polybius as follows: "When the Consuls (corresponding to the proconsul of a province) are about to enroll an army they give public notice of the day on which all Roman citizens of military age must appear. On the day appointed, the fourteen junior tribunes divide themselves, in the order in which they were appointed by
the people into four divisions.

to make the primary division of the forces thus raised into four legions. This division of tribes having been made, the tribes of the several legions take up a separate position and draw lots for the tribes one by one, and summon the tribe of whose it from time to time falls. From this tribe they select four young men, as nearly like each other in age and physical strength as possible. The tribes of the first legion pick out one of them. Those of the second another, and the fourth takes the last. With the next four the tribunes of the second legion have first choice, and those of the first last, and so on in rotation; in which the result is that each legion gets four men of much the same standard.

The physical requirements of a recruit (Veg. I-XX) were quick eyes, muscular shoulders, a broad chest, strong arms, long fingers, a slender body, shined legs, with sainey calves and feet. The height for all legionary (Veg I-V) was six
feet (Roman) or at least five feet ten inches. If, however, necessity demanded, the question of straightness was of more importance than height. Undoubtedly the manner of forming done by Caesar did not conform in detail to that recorded by Polybius, yet from the account one gets some idea of the method used.

One of the most perplexing questions relative to the legion is its actual numerical force when full. The number given by Polybius is 4200 or at times 4200 soldiers or 5000. Livy speaks of a legion with as many as 6000 men. Even in Caesar we find the legion varying materially in number. In De Rebus Civibus VI, 58 we find Commodo's army composed of 110 cohorts and the number of soldiers 45,000. With ten cohorts to a legion, we estimate 4090 men for each legion. But in the following chapter (64) in speaking of his own forces, he says there were 80 cohorts in line, composed of 22,000 men, making his legion but 2700 strong. In BK IV, 5:49, when coming to the rescue of Cicero, Caesar speaks of his two
Legions as scarcely 7,000 strong, which would give 3,500 men to a single legion. We cannot err greatly if we leave the number at 4,700, although this may be rather large. Caesar's legions would naturally by incessant fighting diminish in the number of men contained in each. Yet there is no reason to believe that the legions under Pompey, with the exception of the two legions treacherously withdrew from Caesar, had for any cause been weakened.

The legion of Caesar's time was divided into ten cohorts. He has clear evidence of this from a passage in Bellum Civile:

"Caesaris triplic (aeis); sed primam acies undecem cohortes tenet, quinquaginta legionibus tenebant; haec subsidiae tenebant et minus aliae totidem esse cincuaginta legionis subeiusbustar." Vegetius also plainly states that in every legion there were ten cohorts. Taking 4,200 as the average strength of the legion, the cohorts would be composed of 420 men.

The division into maniples precedes the time of Caesar.
Dolabella states that the legion was divided into thirty maniples and that two centurions were appointed to each maniple. In the new organization of the legion by Marus into cohorts, the maniple would naturally be the third of the cohort. We know that this division of the cohort into three maniples was in effect in the time of Caesar by his reference to the centurions put upon them.

In B.C. 2-25-8 he speaks of a centurion as principis, which refers to the 1st centurio of the 12th maniple of the first cohort. In B.C. 3-64 he says that all the centuriones were killed except a "principium juniorium" i.e., the 1st centurio of the second maniple. Q. Fulginius, in B.C. 46, is called "principes hastati", the first centurio of the third maniple. There was, since the time of Marius, no distinction between hastati (formerly spearmen), principes (the men of more robust bodies and age), and the triarii or pili (the veteran soldiers who tried bravery), but the nomenclature was retained to classify officers. Thus the hastati, pili, principes, hastati, although
men with the same arms and armor, came to designate the first, second, and third centuries, respectively. Caius Gellius, in his Doctr. Attal. 16-4-6, quoting from a certain Cincius, says: Item in his sexto, hoc scriptum est: in legione centuria sequentiae manipuli triginta, cohortes sexcent. This would be further evidence for us, were it not for the fact that Cincius, the man quoted, seems to refer to the famous historian in the times of the Punic wars, mentioned several times by Livy. As we know the cohort division was not known at that time, the evidence seems of no importance. Still we may not lay too much stress on the fact that he was the Cincius Alimentius of Livy, since the name Cincius was the name of a Roman gens. This passage gives us grounds also for the division of the manipulate into centuries.

The officers of an army were the military tribunes, the equites, and the centurions. There were six of the former for each legion.
Caesar's military tribunes were often chosen for political or family reasons rather than from any military efficiency. R.G. 1-37. "After the (time) tribune offers a tribune militum praefectio religiisigal, qui ex urbe urbiciae causa Caesar secuti non magnum in re militare meminisse habebant. The probability is that these men attacked themselves to him for personal gain and that in giving them commissions, he was simply paying his political debt. They were not much valued by Caesar, although there are numerous instances where they commanded in actual battle.

The more important duties performed by the tribunes in the regular Roman armies were transferred by Caesar to the legati. He recognized the inability of the tribunes and in the latter part of the Helvetician war placed a legatus over each legion. He find eighteen different persons who served in this capacity in Gaul. They were evidently not assigned to permanent commands and undertook no independent
operations. One of the duties generally left the prefectus was the oversight of a legion in winter quarters while Caesar was absent. In B.G. II-38, Fabianus is sent with two legions to march against the Morini, which shows that trusts of considerable importance were sometimes given them.

A similar commission is given to Labienus against the Veneti, etc.

The praetor, in addition to his usual duties of providing for the payment and provisioning of troops and the general fiscal matters connected with a campaign, was often given the command of a legion by Caesar. When not on a campaign, he took charge of the receipt and expenditure of the province and assisted the procurator generally in its government.

The centurions were the real officers of the legion. There were sixty in a legion; six for each cohort or two for each manipule. They rose through appointment by the tribunes or by command. From the expression principles, princeps prior, hastatus primus,
we should expect some such
title as filius posterior, princeps
posterior, hastatus posterior, given
to the second centurions of the
various maniples, but we find
no such nomenclature in Caesar.
We shall however use these names
in attempting to show the order
of the centurions' rank throughout
the legion.

As to the relative rank of
the centurions in a cohort,
there seems to be little doubt but
that the filius prior was the high-
est officer, while the hastatus post-
crider was the lowest. But when
we come to consider the relative
rank of a centurion in one
cohort with that in any other,
we are confronted with a
difficult problem. The difficulty
arises from the fact that we
have too definite or positive
information on the subject, and
at best we can only obtain
isolated and vague references
from which quite no vague theories
have been formed, and no doubt
will still continue to be formed.

From such expressions
as primus ordinem (C. I. 41. E. 30. 19.)
and octavis ordinibus, we must infer that the centurions were divided into classes according to rank. In The Annals of Tacitus we find the following:

\[ \text{occisi sex plurimorum centurionum.} \]

From these expressions we obtain at least the requirements to which any theory must agree. 1st. We must infer from the expression "ab octavis ordinibus" that there were at least eight classes, with the possibility of more.

2nd. From Tacitus we must understand that there were at least six centurions of the first class. We gain some knowledge of considerable importance from Vegetius. The passage is as follows:

\[ \text{"quam quasi in orbem quaedam per diversas cohortes et diversas scholas militis promoverint, ita ut ex prima cohortes ad gradum quemque promovatus sodat ad decemvarium et et remaneat aea crescentibus stipendio cum magore gradum per alias recurrit ad primum. Ires primum pilae centurio, posterior in orbis omnium cohortes per diversas administravit.} \]
scholas, in prima cohorte ad haec
pernuit palustre, in qua ex
omni legione insignita commoda
conseguitur; etc.

From these words Aystor
devolves some such meaning:
when a cohort became diminished
through loss of men, the vacant
ranks were supplied from men
of the next lower cohort. Thus the
recruits would be found in the
10th cohort while the best men of
the legion would be found in
the first cohort. When for any
reason there was need of a
centurion, he was chosen from
the common soldiers of the first
cohort and was given the position
of hastatus posterior of the tenth
cohort. He would then pass through
the different positions of the cen-
turions of this cohort until he
became filius prior, when his next
promotion would be to that of
hastatus posterior of the ninth. Thus
he would pass through each
successing cohort, until he
reached the position of principalis.

As regards the cladoe, he
devises the following plan. The
centurions of each cohort form
a class. Thus for each legion there would be 18 classes, each composed of six centurions. The order of promotion was given above. This theory complies with the two necessary requirements, but seems as very impracticable. By this arrangement, not only the best trained soldiers but also the best officers would be brought together in the first cohort. Then those with the least discipline and experience would fall to the lot of the tenth cohort.

Quite a formidable argument against his theory seems to be the very words of Vegetius, a translation of which I give.

"For as it went in a certain circle the soldiers move forward through the various cohorts and colleges (scholas) so that from their first cohort, advanced to some grade, he goes through to the tenth cohort and again with increased pay from that (tenth cohort) on a higher grade he runs back through the others to the first. Thus a centurion of the primus pilus, after he has served all the cohorts through the various colleges, in the first cohort..."
attains his highest reward, in which position he receives the greatest favor from the whole legion. The word "schola," translated sometimes in the above passages, means, as I think, the pili, principes, and hastati, each taken as one schola through the ten cohorts. According to Ristow even once a centurion left the tenth cohort he never returns, which is contradictory to the language of Vegetius.

Another objection to the theory of Ristow is that the centurions primorum ordinem seem to have direct relation with the different cohorts. In B.C. 141, after a special gathering of all the officers of the army, the legions which had been thrown into a panic from fear of the Germans, treat both the tribunes of the soldiers and the centurions primorum ordinem in order to make apology to Caesar. It seems absurd to think that the soldiers of the other nine cohorts went to the centurions of the first cohort for such a service. Evidently some different scheme must be arranged. From
The passages quoted above, we
must grant, that the centurions
of the first rank were the
pili priores, or leaders of the
various cohorts; at any rate
it seems much more natural
that the soldiers of each cohort
go to the commander for such a
service as that mentioned in
B.7. 1-41. If this be the first class,
so it impossible to imagine
that the principes priores form
the second class, the pili posteriores
the third, and the hastati posteriores
the sixth? The order of promotion
would then be as follows: when
the hastatus posterior of the tenth
cohort was advanced, he became
hastatus posterior of the ninth,
and so on in succession
until he reached the first cohort.
He would then return to the
tenth cohort as principes posterior.
Passing through the various cohorts
he would become a pilius posterior,
and then, in turn, he would
become a hastatus prior. The
highest office to be held was the
pilius prior of the first cohort, or
principilus, the height of a solider's
ambition. By this arrangement,
however, we are reduced to six classes which does not fulfill the requirements of the passage cited from Bellum Civile. According to Polybius, each centurion selected a rear rank officer, who was called optis. We cannot be absolutely certain that such an officer did exist in Caesar's army, since no where in the Commentaries is he mentioned. Yet as he is mentioned by Polybius and again by Tacitus, we can say with a comparative degree of assurance that there was such an officer in Caesar's army. They were the assistants of the centurions and as their idenity, one doubt, was quite the same as that of the centurion, we can see how they might have been called centurions. Thus instead of six classes, we would have twelve, which would explain xii. 3-53.

Here seems to be one rather weak point in the argument and which is that each optis, according to Polybius was chosen by his own centurion and hence would...
hardly be in the ranks of promotion. Festus, however, says:—
is a cohort (ref to Optio) dabatur centurioni a tribus, which might seem to remove, to some slight extent, the objection.

On the whole, this seems to be far less objectionable than that given by Bishir, in as much as it seems to explain in a much more satisfactory way the passage from Vegetius as well as the reference in 33. 1-4.

A little confirmatory evidence might still be added from a passage in Livy, where Dr. Leges:—

"tunica in an address to the soldiers relates how he was first centurion in the 10th maniple of the hastati, then in the first century of the first maniple of the hastati, next in the same as to the Triarii, i.e., the principles, and last, in the same as to the Triarii, i.e.,

This shows us that the advancement was through the whole line in a legion before passing to the right line. Still when his reference the class of soldiers of the three lines in the earlier war,
and the absence of the organization by cohorts in the definite form which it lost later, we can scarcely see how promotion could have been otherwise. The old organization, however, lasted until the time of Marius, but a half century before Caesar's time, and from all the evidence we can gather, there is no reason to believe that the general order of promotion was varied by the organization by cohorts.
Of the body guard, praetoriae, holds, but little of accurate knowledge can be learned. The expression occurs but three times in Caesar; twice in connection with the tenth cohort, in the Gallia War. Caesar says that even though no one else follows, still he will go with the tenth legion, which will be his body guard. By this reference we need assume nothing more than that they were troops of fine loyalty to him and that this is a sincere compliment to them, not that the praetoriae cohort was made up of choice legions. From B.C. 7-13, some conjecture that the cavalry third mentioned formed Caesar's body guard. This seems to be a rather far-fetched inference, especially since they were Germans and it is very probable that the body guard was composed of troops who constantly stood in bearing relation to the general—possibly the evocati, veterans past duty years, who served voluntarily.

Besides the legionary soldiers we find mention of the auxilia or auxiliaries, the auxiliary forces, quite frequently in Caesar. They were of course in no case Roman citizens,
but were composed of foreigners and native provincials, usually armed with their national weapons and commanded by native officers. In Caesar's campaigns we find many tribes mentioned. The Lemovices, the Lusci, Germans, Balearicans, the famous Slingers, the Cretan archers, etc. The number would naturally vary as to composers of these nations. Of the army sent to Spain, we find 6000 auxiliary. Yet Caesar placed little confidence in these troops. In one instance we find them placed between the lines, seemingly as a precaution against flight. From B.C. 3-25 we are able to form some accurate estimate as to their value in an army; auxiliaresque, quibus ad praetorem non multum confidebat, lapidibus telique administrandis et ad aggerem cespitibus confortandis splendere atque opiniones pugnantium praebent.

The cavalry of the days of Polybius was three hundred for each legion, selected by the censor on the basis of wealth from Roman
citizens. But in Caesar's army they seem to be made up exclusively of auxiliary troops. In the Aelianian war he had 4,000, "selected from the whole province, the Aeduanus, and their allies." In the seventh book he mentions the German cavalry of 400 which he had had with him from the beginning. In the fifth book he also speaks of a Spanish cavalry.

The cavalry was divided into squadrons, 

formae, composed of about 30 men. Polybius says there were 30 men, Vegetius, 62 men. The estimate of 30 men for Caesar's squadron cannot be far from correct.

The leader of the turma was the decurio, whose general duties and qualifications were the same on horse, as those for the centurion on foot.

The arms of a legionary were the sword and spear. Of the size of the sword we know comparatively little. From Guy we know what a hastily made scutum could be inflicted with it. It hung from the right thigh, had an excellent point, could deal a formidable
Slow with either edge, since its blade was stout and unbending.

The pilum, however, was the chief weapon used, the sword being used only when the enemy held out from the volley of javelins (emissus pilum). In the earlier wars the soldiers carried two spears, a heavy and a light one, but Caesar makes no mention of a second one.

In the fifth book, where he mentions the rival exploits of two centurions, the language shows us plainly that both carried but one spears.

He gets quite an accurate account of the pilum from Polibius from which we can form some tolerably definite idea of the pilum of Caesar's day. He says of some of the pilae are thick, some fine. Of the thicker, some are bound with the diameter of a palm's length (2½ in), others here a palm square. The wooden shaft of them is about three cubits long (4½ ft) and the iron head, fitted to each shaft is barbed and of the same length as the shaft.

Plutarch states that Marius contrived a new form for the javelin, till then the need to fasten the shaft to the iron head with
two pins. But Marines leaving but one, had the other taken out, and a wooden peg put in its place. By this contrivance we intended that when the javelin struck in the enemy's shield, it should not stick straight out, but the wooden pin breaking and the iron pin binding the shaft of the weapon should be dragged upon the ground, while the point stuck fast in the shield." This I feared would render the shield useless and immovable while as long as the spear remained in it.

Caesar also speaks of how he broke the phalanx of the Helvetii by this same device, so that many of them preferred to fight with unprotected bodies andthrow their shields away. The pila of Caesar was no doubt less heavy and clumsy than that described by Polybius, but his description is suggestive of the general make up of it.

The defensive covering of the body wore a coat of mail (lorica), a metal helmet (cassius), greaves (corseae), and the shield (centuri). The
shield, four covered and cylindrical, was two and a half feet wide and four feet long. It was made of boards firmly fastened together, lined with leather, a rim of metal ran around the edges and added to its strength. In the center of its face was the boss (nub), a protection of iron intended to cause missiles to glance off.

The tactics of the Army.

The tactical unit for operations was the cohort, since the men of any one cohort, as a rule, remained together. Authorities differ as to the amount of space taken up by each cohort. It seems very probable that the maniples were placed side by side since if they were placed one behind the other, the distance for hurling the javelin would be much greater without any specific gain. We have 420 men to be the average number in a cohort, or 140 to each maniple. For marching purposes in hurling
the year, there feet from man

to man in rank seems quite
sufficient. This also is in

accordance with Vegetius, prati-
ning that there were fourteen reen-
lie rank and a space of three
feet for each centurion, we get
an estimate of 144 ft (14 x 3 x 3 + 18),
as the front of a cohort. Vegetius

gives us to understand that
there should be six feet between
the ranks, in addition to one foot
given to each man in which
to stand, making a total of 72 ft.

This seems entirely too great a
space even for the use of the
sword which will be spoken of
later, and Vegetius, too, afterward
qualifies his statement. Hann

erius expediat, ut confessi fugent,

ipse longius separati! Hanc
si minimis fuerit acies tenuta,
cito ab adversario faeta in-
pressione perspiciitur et nil-
num potest esse remedium.

In the U.S. army, the breadth
of a man is taken at 22 in.
and his depth at 12 in. and
there is a distance between ranks
in column 2 march of 32 in.
from back to breast is 14 ft.
from heel to heel. In line of battle, the distance from back to breast is 22 in., from breast to breast 34 in. In line of battle modern soldiers would naturally fight in closer ranks than the ancients on account of the nature of the weapons. A fair estimate as it seems would be four ft., about the distance given in Deponent for column of march. Further evidence is furnished by Afr. 15, Caesar here forbids his soldiers, when they are being moved by the horsemen of the enemy, that they advance more than four feet from the standards. That reason would Caesar have for saying 4 ft. any more than 6 ft. or 3 ft. had not four feet some standard measure, which as we have said was no doubt the distance between ranks. Thus the cohort, under ordinary circumstances would be 144 x 40.

In Afr. 2-25 we find the expression "manipulos laxare, ego facilius gladios uti possint," from which we gather that more room was needed for the use of the sword than for the hushing.
It is not certain that Polyaenus demands this order for this purpose, which Rustow thinks must be a maximum. He makes an estimate of four ft. as being sufficient for this purpose. If we take the estimate of 6 ft. given by Polyaenus, the march would be advised that the line would advance in three files with intervals between the cohorts, equal to short front, and having thrust the javelin, would take the 6 foot space and fighting with the sword, thus filling up these intervals.

There seems, however, sufficient proof to say that sometimes there were actual intervals at the time of battle. In B. B. 5-15 Caesar speaks of the cavalry and charioteers of the Britons dashing through a narrow space between the cohorts and retreating again in safety. Rustow says he cannot well think of an interval in this case of less than from 75 to 100 ft., although Caesar calls it perexigus. Then the expression disporre cohortes occurs quite frequently which may mean merely to set in order, or arranged, but
this compound would seem to indicate separation. The argument might be brought forward that this refers to the distance between the different lines. This cannot will be rejected, but still taken in connection with B.C. 2.25 (confertis militibus sili ifors ad pugnam esse impedimenta) it seems at least possible, in as much as we know that such was sometimes the case, as in Britain, to take it the other way as referring to the distance between cohorts in any one line. If we grant that this interval was equal to cohort front, the disposition of cohorts into three lines would well accord with it since the second line would stand opposite the intervals of the first, and the third the second. Such an arrangement we know was true in the time of the Roman war, but when we note that the line were some 150 to 200 feet apart, it seems scarcely probable that the distance was so great. The best explanation seems to be that there was an interval between cohorts of some 30
to 25 ft. Any space greater than this would render it impossible, at least, impracticable, since the enemy coming on would reach between the coverts, and attacking them on the exposed side, would have a great advantage.
(were some hundred an:


gifty feet back, completely

restablish the first line before
and could be brought)

The offensive formation of
the legions was in two or
three lines (acies duplex, tripex).
Each legion was usually drawn
up in the three line order, which
consisted of four cohorts in the
first line, and three in each of
the others. When for any reason
it was necessary to extend the
front of the army, the cohorts
were arranged in two lines
five cohorts each. We have men-
tion of one instance where a
fourth line was made from
cohorts detached from the third
line, evidently designed to
meet a flank attack, which
however would more properly
belong to the defender.

The defensive formation
of the legion took in one
line (acies simplex), or in
a circle (orbit). But no reference
is made to the single line
formation by Caesar, which
took place in the African
war against the great cavalry.
force of Sabinius. How much of a circle the orbis was not do not know. We have no account of any such formation in either Polybius or Vegetius. It was only used against overwhelming numbers. As for instance, when the Sabini attack the three hundred soldiers on landing from Britain; also at the departure of Sabinius from winter-quarters, when attack by the Eburoines. The probable explanation is that the cohorts drew up in what was the equivalent to our hollow square, and when thus formed, the term orbis may have come from flattening out the corners of such a square for easier defense.

A few words is all that can be said with regard to the tactics of the cavalry. The conjecture that they were arranged in three lines in imitation of the legion, can be nothing more than a conjecture. Still, as accurate an account as any, can be obtained from
the language in Esh. 3-93. "Eodem tempore equiti
ab eunomia fruam Pompeii,
int erat imperium, cuius rei
procuratum, omnicumque
multitudine sagittariorum
se profudit. Deorum impetum
mater equitatus exstultit,
red prolataion loco mutuo
exhit, equitique Pompeii loco
acrine instare et se tumultu
explicere acierique nostrum
a latere aperto circumvire con-
serunt." By this it would seem
that the attack was in mass
and only after rout had been
made, or at least a telling
impression, did they separate
into tumultae. This was no
doubt to pursue in different
directions and follow up the
scattered foe.

The line of march for the
cohort was submanipulation, by
column of maniples, or centuriation,
by column of centuries. The
order of march could be easily
formed by turning to the
right or left as they desired
to move. Thus the 5th of the
file, on facing right or left,
would then be the column front, i.e., 10 men. This front could be reduced in width from the battle order of 40 to 60 ft. to that of marching order, 30 ft. by simply dressing the front rank inward, or by making each second century fall in behind the first, this distance could be reduced to 15 feet. This was called marching manipulation, which Caesar quite probably used, although the expression is not found in his commentaries.

The column of centuries, mention by Caesar in Br. 1-26, was formed by the maniples on the right or left marching straight forward, followed in order by each succeeding maniples. In this order each cohort would march with its centuries in regular sequence. This column would have a front of 14 men, or a space of 45 feet (centurion 3 ft). This of course would be impracticable for a long march except in a very level country, since but few roads would accommodate so wide a column.
The legion, the ten cohorts combined, could march in line (acies instructa) or in a square (agmen quadratum). The march in line of battle is mentioned many times in Caesar. If the legion in three wishes to take ground to the right or left, it could do so by facing the whole body to the right and marching the three columns as far as desired. In the Civil War we learn of a march by columns of wings formed directly from the line of battle. Thus the right wing would contain cohorts 1, 5, 8; the center 2, 6, 9; the left wing 4, 3, 7, 10.

[Diagram of marching formation]

March by column of wings.
I took up the agmen quadratin. again. It is only mention by Caesar once, which is cited. As was said another instance somewhat similar is found in Enol. 7: 57. In both these cases it was used when a sudden attack was expected. It seems to me to have been used similarly to the orbits.
The aequus quadrature seems to have been a defensive movement with some such purpose as that of the obis, with the baggage in the middle for protection. Livy cites an instance where Hannibal draws up his legion in this form. A movement of some such a nature is recorded in the seventh book.

The days march was reckoned from camp to camp (ex loco castris quintis sernovian servavit). A day's rest was customary after three or four day's marching, at least a march of seven days without intermission calls for comment from Caesar. Each night or whenever halt was made, the camp was fortified. The ordinary day's march was from fifteen to eighteen miles, supposed to be done in five summer hours, about three if warm. Vegetius says that the recruit was drilled to march 20 miles in five summer hours at the regular military step (militari grade) for the same time at quick step (pleno grade) twenty-four miles in the same think. Farrow in
his Military Encyclopedia, states that the average march for infantry today is from 15 to 20 miles per day. The average Roman march (miles per day) is thus seen to have been no greater than that of modern days. The march was generally made from early morning (de tercia vigilia) and

wore probably ended soon after noon (et in magna parte dies consummata infra horam, tempus relinquum volentat), for the purpose of fortifying the camp. There were to consider exceptional marches, and it goes without saying that the Roman army was subject to the same interruptions and delays as our own. Quite an extraordinary march is made by Caesar in the seventh book where he states that he went against Litavice and marched twenty-five miles, attacked and made them yield, marched back twenty-five miles and reached Gangestad the next day before daybreak. Crassus, who marched to join Caesar, who was moving to the rescue of Cicero, made a journey of 120 miles from mid-
night to nine o'clock.

The step, grades, was 2½ Roman feet or one half pace (passus). We get this estimate from Pliny, who says that the "stadionum is equal to 175 Roman paces, or 625 ft." Hence the pace will be equal to five ft., and the grades as given above. The Roman foot was about 97% of an English foot which make their "milia passuum" about 140 yards less than our English mile.

If we grant with Tarrand that the four summer hours mentioned in Vegetius are equivalent to 6½ hours of our time, we get an estimate of 100 steps (20000x2 divided by (60x6.5)) per minute for common time and 120 steps per minute for quick time. Tarrand says that in the United States service the length of the direct step in common and in quick step is 28 in. measured from heel to heel: and the cadence is at the rate of 96 steps per minute for common time and 110 quick time. Of course we can not be very accurate or insist on conclusions since our estimate of the Roman hour can be but a mere conjecture. Still our estimate...
cannot be far from true, seeing that both armies marched about the same distance per day.

In the advance, we must recognize three distinct divisions: the van guard (primus agmen), the army proper (exercitus, etc.) and the rear guard (agmen extremum, movis dominantum). The van guard was composed of cavalry and light armed foot soldiers, whose purpose was to harass the rear of the enemy; also to learn the nature of the country and the journey of the enemy. Another duty of the van guard, in company with some centurions, was to select the site for the camp. The main body marched in a single column, short following cohort, manipulation or centurion, or in battle order, according as the enemy were far or near, or the wind through which they marched friendly or menacing. When not in the presence of the enemy the baggage of each legion accompanied it; in his presence the baggage was kept together, the main army being in front, then the baggage, guarded from behind by a strong rear guard.
The Battle

Caesar kept to the uniform habit of drawing up his legions on the gentle slope of a hill so that they might have the advantage of the descent for casting the pila as well as for the rush upon the enemy. Vegetius also gives this advice and much other which any general would know to be to his advantage; such as, avoiding forests and marshes, keeping the sun to the back of his troops and precepts of a self-evident nature. The cavalry was generally placed on the flanks of the legion, but sometimes on but one side. At the battle of Pharsalus, Caesar had his cavalry on the right, Pompey his of the left. It might be posted in the rear, as was the case at Bilracte, because it was not deemed reliable, and in the battle against Ariovistus because the enemy was protected on flank and rear by their wagons set up in defense; and cavalry against them was useless. The light troops, archers and slingers were placed on the wings to
resist flank attacks and we
find frequent mention of their
being inter equites, which would
seem to favor the theory that
there were intervals between
the turmae. If time permitted,
the general made the address
clothastic to each legion.morder
to arouse their martial ardor,
especially when there was a
general fear of the enemy again;
when they were going to fight.
The manifest reluctance was put
upon the initiative, so he
to make the first attack a
telling one. The infantry, having
reached the proper distance,
which would not wound a man,
[they] set out on a run to meet
the foe. If the volley of spears
produced sufficient effects,
falling to with the sword, the
Legionary would penetrate into
them and have the enemy at
his mercy. It sometimes hap-
pened that the enemy had come
to close before the pugilins were
thrown, and in that case the
soldiers used the sword at once.
But this was rare, and the volley
of spears usually preceded the
the use of the sword. The rush was usually made by one line at the same time. In Apr. 82, we find the cohort on the right wing beginning and the rest of the line taking it up. The first ranks were sustained in such a manner that there was a never ceasing motion in each cohort, as those who still held their pilae in their turn advanced to hurl them. The second and third lines remained at a suitable distance in the rear, ready to support the front line. All the lines gradually came into action, the third however, used as it was for a reserve, was only used for the critical moment. We find but few defensive battles fought by Caesar, and only under the most favorable condition of the terrain. If possible the army backed on the camp, and give the enemy only one approach, its front and up a slope. The camp of Caesar on the Arvona, where he invited attack is a good example of this. If the enemy had attempted to cross the Tiber, Caesar
could have charged upon them with decisive effect. The battle at Alesia was defensive, coupled with sallies, and here too the lay of the country was greatly in his favor.

Camp.

We do not know exactly how Caesar's camps were laid out. Polybius gives us an accurate description of the camp in the time of the Second Punic war. Vegetius, too, gives us a number of points concerning the camp of his day. Caesar had no definite number of auxiliaries, as was usual in the Punic wars, and the camp had to be constructed accordingly. Its general arrangement was what it had been for centuries. There were a number of points to be considered in its location; in summer to be near a good and wholesome supply of water; in winter a supply of grain and wood; for they held this latter not only for watch fires and cooking purposes, but also for various uses in fortifications.
possible, the camp was pitched on high ground, so that its front faced before it a portion of the slope and its rear lay on the summit (ab decumano posta ac summo prego collis). The site of the camp was selected by a camping party sent in advance under the command of centurions. But it is needless to say that the Romans camped where they must; if a good site was not at hand, they had to content themselves with one less desirable.

The general form was, no doubt, a square or rectangle, but if the nature of the place required, it might be semi-circular (castrum semicircularum). Ristow conjecture that this camp at Thapsus was but a series of rectangular camps, arranged in crescent form, seems to be too strained for brevity. At any rate in the time of Verg.

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At any rate in the time of Verg.
us possible.

An attempt will be made to give as accurately as possible the general lay of the camp with the help available. One regret to say that a very important book, the works of Trogus De munitionibus Castrorum, which gives us the camp in the time of the Empire, was not at our command. The defences of the camp were the fossa and agger. It is difficult to determine the dimensions of the ditch (fossa). Vegetius gives two sizes. The top might be either 9 or 12 ft and the depth 7 or 9. For the customary fortification of camp, it seems probable that its dimensions were something like 9 x 7. Still Caesar mentions ditches of much larger dimensions. But the works at Alesia, the ditch was twenty feet wide. The agger was formed from the earth thrown inward from the ditch. Caesar mentions various heights for this wall and it varied as did the ditch. At the top was often placed the lorica, or a parapet of stakes placed close together. Its outer side was made perpendicular and [was] the earth was
kept in place by brush and hurdles.

Entrance to the camp was made through gates, probably 40 to 45 ft. wide (max. front). There were at least one on each side, that in front toward the for being the porta praetoria; the one opposite, the porta decumana, also called porta quaeatoria; those in the right and left sides, porta principalis dextra, and porta principalis sinistra. We can scarcely doubt that the portae must have been always defended by barriers of some kind; but when special precaution were required they were closed by regular gates defended by towers (portae fores altiorum turretis imposita). Entering the porta praetoria, the observer would see before him an open space five hundred feet in width around the whole camp. Room was thus given for moving troops to defend the walls, but the most important use of this space was to secure the tents from the danger of being set on fire, and keep the soldiers out of the range of the enemy's missiles. The space bounded by this avenue was divided into blocks
by streets. The principal of these were the *via principalis*, 160 ft. wide, and the *via Quintana*, 60 ft. wide, which divided the whole camp into three parts. "Each of the segments had a name. The whole of the middle segment was called *Lata praetoria*. The segment included between the *via principalis* and that side of the camp in which the *porta praetoria* stood, formed the *Pracentura*. The segment included between the *via Quintana* and that side in which the *porta decumana* stood, formed the *Retentura*. At the junction of the *via praetoria*, a street from the *porta praetoria*, and the *via principalis*, and extending back to the *via Quintana* was an open space called the *praetorium*; here were the general quarters, the tribunal on an elevated platform from which addresses were made to the troops, and the forum for the meeting of the soldiers. Back of the *praetorium* was a similar space in the *retentura*, called the *quaestorium*, where were kept the hostages, prisoners, etc. in charge of the *quaestor* and his staff. The exact position assigned
to these places is conjectural; but they were, to say the least, in the immediate vicinity of these spots. The remaining space was portioned out according to a definite plan among the various divisions of the army and divided by smaller streets. But to assign the definite place for each cohort, turma, etc., at a time when the number in the army was constantly changing, as they were in the time of Caesar, seems to be a matter of conjecture rather than of any accurate knowledge. Each cohort occupied a space one hundred and twenty feet wide and one hundred and eighty feet deep, cut into six parts, and for each century; Josephus, in his account of the Jewish war, takes special notice of the Roman encampments, and although his observations do not go into detail, they are nevertheless a useful and corroborative supplement. He begins by saying that the Romans while [defending] invading an enemy's country, never hazard an engagement until they have fortified a camp which is four
is a square, with four gates, one on each side. He adds that if the ground is not level, it is leveled. The camp is divided conveniently by streets, in the middle are the tents of the officers, and in the very center of all is the general's own tent, also the market place, and seats for the officers, superior and inferior, where if any differences arise, their causes are heard and determined.

The permanent camp (castra station) was laid out much the same as the daily camp, but was more strongly fortified in every way. The walls were solidly built and fortified by rectangular works, placed at convenient distances (castella). In winter quarters barracks covered with skins and straw took the place of tents, as better protection to the occupants.

The Siege.

The walls of towns were generally 7 stones, and very high. About thick. Many times, however, there were mere fascines of stone with a filling of earth and rubble. To attack
The walls there was no artillery capable of making breaches. The ballistae were capable of throwing masses stones at great distances, but their force was not sufficient to break down the walls. To do this they must approach near the walls. The methods for capture were of three kinds, assault, blockade, or siege. Usually a wide and deep ditch, soft or dry, ran around the wall, and tokens at regular intervals added to its strength. In the first method (appaugetis repellantia) the soldiers filled up the ditch at points chosen by mules, and leaving crossed ladders (escalae) and mounted the walls. At the siege of Conphi, Caesar in this summary manner took the town in about three hours (post horum mensae ---- ante eodem occasum). But if the strength of the fortifications was such as to make an assault impracticable, the regular blockade (obsecus) was used. Strong redoubts (castella) were thrown up connected by a line of earthworks, the whole known as circumvallatas.
If there was danger of an
enemy's army coming to the
relief of the place, another line
of circumvallation was drawn
outside the besieger's camp, facing
outward to fortify and attempt
to raise the siege.

In the regular siege
(by which), the principal work
was the 'agger', a mound of
timber, turf and earth, extending
from the line of intrenchments
toward the wall. These mounds
were frequently of very great
length and height. At the siege
against Avaricum, the length
was 330 ft and its height was
80 ft. It was not of this height the
whole distance, however, since
the agger was so constructed as
to gradually increase in size
until on a level with the top of
the wall. Under a protection of
this sort, mining could be carried
on to a great advantage and the
ditch filled up. Ptolemy conjectures
its width to be some fifty feet;
the width of a maniple. This again
can be but mere guess work
as we have no statement of
certainty or even approximation.
on this subject.

The most of this work had to be done under fire, and means had to be provided for protection during its erection. For this purpose, manteleti (platei), and movable sheds (vinea, musculi) were constructed. The former were used by the men building the aboge and the latter to bring material to the workmen, to fill the ditches and siege work in general. There were also movable towers, in the lower story of which was the battering ram, a beam from 60 to 100 ft. long, ending in a mass of metal in the shape of a ram's head. This ram was also used frequently under a covered derrick (called a turret).

Josephus gives us a very interesting account of this machine, its effective power, and the various means used by the besieged to destroy its effect—a second wall, locks of charcoals, heads of trees to destroy its covering, etc.

In the upper stories of this tower were stationed sharpshooters, and
pieces of light artillery to drive
defenders from the walls. Access
was sometimes had to the top of
the walls, across the ditch, by means
of draw-bridges attached to the
towers. The towers was built so
far from the besieged place as to
be out of the enemy's reach and
then picked up to the walls by men
stationed inside and behind it.

It was accounted a very foun-
didable machine of attack and
was opposed in several ways;
Vegetius speaks of undermining
the ground work which the
foes had to pass, as to surfeit
it. At Aquileia the height
of the wall was increased and
temporary wooden structures
were erected on the wall.

A few words remain yet
to be said about the artillery.
Caesar called all missile throns,
tormenta, because they derived
their propulsion from twisted
ropes, sinews, hair. The cata-
apults were huge bows, which
shot horizontally, or at a slight
elevation. Large arrows, sharpened
heads, fire-bolts, etc., at a great
distance. The ballistae were larger
than the catapults and hurled massive stones. It was in siege work, both attack and defense, that these engines were employed, particularly in defense. They were altogether too cumbersome to be used very extensively in the field and were only for the attack or defense of strong positions. The smaller catapults, called scorpiones, were probably used more in the field, and it appears that with these considerable precision of aim could be acquired. At New Carthage Scipio had 120 large catapults and 23 large ballistae. And Josephus says that the Jews at Jerusalem had 300 catapults and 40 ballistae. He also gives examples of the working power of these engines.
The Formation and Tactics of Caesar's Army

J.C.A. Nutterman