reaſon, double care ſhould be taken to straiten them more cloſely, and to prevent their ſallying out with impunity. As the works carried on beyond the second parallel are more exposed than the rest, becauſe of their proximity to the covert-way, no part ſhould be advanced without being well ſupported. Hence, as we have already taken notice, half-places of arms are formed, in order to support the head of the trenches, till they reach the third place of arms ; which must be ſet about with the greatest care and ex­pedition poſſible. When this is done in the manner it ought, there will hardly be any farther danger from the ſallies.

Sallies are ſeldom made in the day-time but by a pre- sumptuous enemy, who imagine they may ſafely attack and defy the troops on duty in the trenches : but they are easily repulſed, unleſs the beſiegers are ſo weak as not to be able to furniſh a ſufficient guard for the trenches; in which case they ought not to continue the siege, lest they run a risk of being at length entirely defeated.

At the opening of the trenches, and when the beſiegers are at a good distance from the place, there is little occa­sion to be afraid of any ſallies in the day ; for there would be full time enough to prepare to receive them before they reached the works. If the enemy are diſpoſed then to iſ­ſue forth, they will do it by night ; but it will be an eaſy matter to get intelligence of any attempt they may make, by ordering parties of 10 or 12 men, headed by a ſerjeant, to range in the night between the trenches and the town.

Theſe men may lie on their faces as near the place as poſſible ; remaining in profound silence till they hear or per­ceive ſome motion in the covert-way ; then they ſhould send one of their own body immediately to acquaint the lieute­nant-general who that day commands the trenches, and the rest ſhould continue there as long as they can be concealed, to see which way the enemy direct their courſe. This caution is not only simple and eaſy, but ſufficient to guard the besiegers against ſurpriſe, and to enable them to give a warm reception to the enemy.

When the works are advanced pretty near to the place, for instance, to the third parallel, if the enemy ſhould then ſally out and fall upon the workmen, the latter must be or­dered to retire quickly to the back of the third place of arms, and let the guard fire briſkly upon them, without minding the overturning of a dozen or two of gabions ; for the galling fire of the ſmall arms, to which the enemy are expoſed during this expedition, will make them pay dearly for what little diſorder they occasion.

**11.** *Of the Lodgments on the Glacis, and the taking of the Covert-way.*

We left the works at the foot of the glacis, and at the third parallel; our busineſs is now to make a lodgment there, and to go on with them till we have driven the enemy from the covert-way.

Our being then ſo near the covert-way, renders it impoſsible to defile from it ; but in order to prevent the effect of enfilading, it is neceſſary to make the trenches much deeper in the glacis ; the fire of the covert-way being very near, cannot plunge into thoſe deep trenches, which renders it leſs dangerous to abide there than it would otherwise be were it not for this precaution : or they are made with tra­verſes much in the same manner as in the covert-way, by which means the enfilading will be prevented in part, though not entirely.

In regard to the figure of the lodgment on the glacis, it varies according to the different circumstances or position of the works by which it is defended. The common way is to make ſeveral ſhort turnings or zig-zags upon the ridge of the glacis, in the direction of the ſaliant angle of the covert-way, and continued to this angle ; or you begin with making two or three ſhort turnings towards the foot of the glacis, from whence you aſcend afterwards by a direct trench, or sap, in the following manner.

Two ſappers roll each a mantlet, or stuffed gabion, before them on the ridge of the glacis ; each making a sap, one on one side of the ridge, and the other on the other. The ditch is dug deeper than uſual, in order to cover them the better against the fire of the place. This work, which ad­vances on both sides at the same time, and both sides co­vered, each with a parapet, is what we called a *double sap.* In the middle they make traverſes three fathoms thick, and of the same breadth as the trench. On each side ſmall paſſages are made like thoſe overagainst the traverſe of the covert-way, to the end that the communication thereof be not interrupted.

Theſe traverſes are constructed ſo near to each other, as to be a ſufficient cover, by their elevation and distance, against the fire of the place. In order to guard against the effect of the grenades, upon coming within their reach, that is, within 14 or 15 fathoms of the covert-way, care is then taken to cover this trench with blinds, or, which is the same thing, to cover the upper part of it. The first and second figures of Plate DXXXIII. will show this direct trench. The first exhibits the plan, and the second the profile, which passes over one of the traverſes.

All this being done, and the third parallel finiſhed in the manner we ſuppoſed, they advance from this parallel upon the glacis to each of the ſaliant angles of the covert-way of the front attacked, and they begin with making two or three ſhort turnings, as marked on Plate DXXXIII. fig. 6. along the ridge of the glacis, ſo as to occupy about one-third thereof. Theſe are to be made as deep as is neceſſary, to be a ſhelter against the fire of the covert-way ; afterwards they may proceed directly along the ridge of the glacis, by a deep ditch, to the ſaliant angle of the covert-way. Μ. Vauban obſerves, that if we follow directly the ridge of the glacis, this trench is made without much danger : for the palisade which is placed at the ſaliant angle of the covert­way, and the other two next it, do not preſent directly to the ridge, but only oppoſite to the faces ; where at the most there is only room for one or two fusileers to see the head of the trenches, and who are easily silenced by the fire of the third parallel, which ought to be well ſerved, and like- wiſe by that of the ricochet.

Upon coming to the middle, or two-thirds of the glacis, two new saps are made, *b b, ibid,* which embrace both sides of the covert way, to which they are almost parallel. Their length is 18 or 20 fathoms, and about five in breadth. They are covered at the end with crochets and winding traverſes, which prevent the fire of the covert-way from enfilading them easily.

The parapet of theſe saps is raiſed about eight or nine feet above the glacis ; and by means of gabions, three ban­quettes are made, as may be seen Plate DXXXIV. fig. 5. The soldier placed on the upper banquette is thereby raiſed high enough to plunge into the covert-way, as appears from the same figure. When this work, which Marſhal Vauban calls the *cavalier of the trench,* is once finiſhed, it is very difficult for the enemy to remain anywhere in the covert­way ; for they would be too much expoſed to the fire of the ſoldiers placed on theſe cavaliers. But theſe places of arms or cavaliers cannot be made without being protected by the ricochet batteries, which enfilade the covert­way.

Theſe cavaliers being once finiſhed; it is eaſy to carry on the direct trench, as far as the ſaliant angle of the covert-