

those within from an outside enemy, and to also have all within in range of the guns, thus guarding against possible eruption from the interior. The stockade proper was constructed as follows: A trench was dug two feet deep, and every ten feet along the bottom a hole one foot in depth was dug, in which posts about six by ten inches in size were inserted, while between the posts, and on the bottom of the trench, was a strong girder firmly mortised into the uprights and fastened with a strong wooden pin. Slabs of varying widths, but all being about six inches thick, were then placed in an upright position between the posts aforesaid, resting on the girder and firmly fastened. At a distance of twelve feet up the posts there was run another girder, which, too, was fastened by large pins, these resting on the slabs, which were slotted at the top, into which a piece of timber was passed, after which huge pins were driven down through the girders and the timber in the slots and well into the body of the slab. The main posts extended about three feet higher, a lighter girder being run near the tops, and between the two last mentioned there was a row of light slabs, two inches thick and four wide, and pointed like pickets. It is therefore easy to conjecture that when the trench was filled up with tamped rock and dirt that the stockade was almost invulnerable, when we consider the implements of assault that were likely to be brought against it in those days of rude weapons of war. Around the stockade there were embrasures for muskets or cannons, of which latter, it is said, there were several in the fortress.

On the northern side of the eastern angle a chapel was erected and was used by the officers only. It was surmounted by two domes, one of which was round and the other pentagonal in shape, while in one of them was a chime of bells that were wont to peal only the matins and vespers in rich mellifluous tones. On the west side of the northern angle were the barracks, roughly constructed, the framework being of large, heavy timbers. On the northern side of the western angle was a one-story building, showing a better style of workmanship—evidently officers' quarters—while on the southern side of the western angle was a workshop for the various branches of industry there prosecuted, and on the eastern side of the southern angle was a row of sheds, probably used as stables and forage stores. There were a number of exterior buildings, and all in keeping with the houses of the peasants already described as existing at Bodega. They were small and constructed from rough slabs riven from redwood. These hardy fellows were so rugged and inured to the cold of the higher latitudes that they cared not for the few cracks that might admit the fresh, balmy air of the California winter mornings.

To the northward of and near the cluster of houses, situated on a knoll, was a windmill, which was the motor for driving a single run of burrs, and also for a stamping machine used for grinding tanbark. This windmill produced all the flour used in that and the Bodega settlements, while probably a considerable amount was sent with the annual shipment to Sitka. This was probably the first flour mill of any description north of the bay of

San Francisco. The stamp for crushing tanbark was made of solid iron, about four inches square, hung upon a crank on the main shaft of the wind wheel. For several years after the Americans came into possession it did good service, but not a trace of it now remains. To the south of the stockade, in a deep gulch at the debouchure of a small stream, there stood a very large building, the rear portion of which was used for tanning leather, where they had six vats constructed of the usual redwood slabs and all the other necessary appliances, such as scrapers, mullers, etc., but these were large and rough in make. The front half of the building was used as a shipyard. Ways were constructed on a sandy beach at this point leading into the deep water of the bight, and upon them were built a number of sea-going vessels. These craft all did good service, and one of them plowed the seas not long ago.

Tradition says that to the eastward of the fort, and across the gulch, there once stood a very large building, which was used as a church for the common people of the settlement. Near this place of worship the cemetery was located. A French tourist once paid Fort Ross a visit. He arrived after dark, and asked permission to remain over night with the parties who at that time owned the Spanish grant on which Fort Ross is situated. During the evening the conversation naturally drifted upon the old history of the place, during which he displayed so great a familiarity with all the surroundings that his hosts asked if he had ever lived there with the Russians. He answered that he had not, but that he had a very warm friend in St. Petersburg who had spent thirty years in California as a priest of the Greek Church, and that he had made him a promise upon his departure for the Coast, about a year before, to pay a visit to the scenes of the holy labors of his friend, and it was in compliance with that promise that he was there. Among the many things inquired about was the church close to the cemetery. All traces of this building had long since disappeared, and the settlers were surprised to hear that it ever existed. The traveler assured them the priest had stated distinctly that such a building had stood there, and also that a number of other buildings used as homes for the peasants stood near it.

The Russians had farmed very extensively at Fort Ross, having as much as two thousand acres under fence, as well as large tracts that were unenclosed. Their agricultural processes were as crude as their other work. Their plow was very similar to the old Spanish implement, so common in California at that time and still extant in Mexico, with the exception that the Muacovite instrument possessed a mould-board. They employed both oxen and cows for draft animals, using the antiquated Spanish yoke adjusted to the horns instead of to the necks. It is probable they used the ancient cart of the Spaniards, as well as sleds. Their grain was cut with a scythe when it was ripe and then transported to the threshing floor, which was constructed of heavy puncheons elevated somewhat off the ground, and between which were interstices through which the grain fell. The