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Archaeological Investigations at Chaffeys Lock,
Rideau Canal, 1981

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Introduction

In the fall of 1981, salvage archaeology was required around the lockmaster's house at Chaffeys Lock on the Rideau Canal. The deteriorated cellar entranceway had to be stabilized, and a ramp built for wheelchair access to interpretive displays proposed for the building. These renovations necessitated archaeological monitoring, hence testing was conducted on the west side of the cellar entrance and in the designated area of the access pad to the ramp.

The positioning of these disturbances was fortuitous in that it required excavation in both the front and rear yard areas of the lockmaster's house. The stratigraphy was well defined thereby permitting the material culture from the various layers to be assigned to three distinct periods of occupation of the building. The combination of these factors presented an opportunity to examine differential yard usage within each period and to test hypotheses concerning the dynamics of the site's development over time. Structural changes in the positioning of entrances and in the use areas of the grounds were reflected in the artifact deposition pattern. As well, the effect of increasing emphasis on aesthetic landscape treatment was related to decreasing artifact accumulation rates.

Although the testing was too limited to permit conclusive statements, the sample will hopefully be extended during future salvage operations at similar settings along the canal. The results are presented as an ongoing research design which may be of interest to other archaeologists and to interpretation staff concerned with period presentation.

History

The Rideau Canal was constructed in the late 1820s following the War of 1812. In the tense atmosphere that prevailed despite the Treaty of Ghent, British military strategists felt the need for a secure route to ship supplies and reinforcements from Montreal to the Great Lakes. The St. Lawrence was too vulnerable to defend against American



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attack, hence the inland Rideau route was constructed. The canal was built through a largely unsettled system of rivers and small lakes between what are now the cities of Ottawa and Kingston (Bush 1976).

Soaring expenditures due to the unanticipated costs of enlarging the lock size for commercial transport prohibited the construction of many planned defensible buildings along the canal. During the 1840s however, increasing hostilities and border tensions reinforced the demand for additional defense spending. The British Ordnance Office recommended the construction of defensible lockmasters' houses at isolated lockstations to serve as fortification against possible attack by marauding bands of American saboteurs. In the event of war, it was expected that these structures would also serve as rallying points for the local militia.

Chaffeys was the first of the loopholed lockmasters' houses constructed and it served as a prototype for eleven other such structures built along the canal between 1844 and 1852 (Fig. 1; Passfield 1980). Their common characteristics are one storey, musket-proof stone construction, fireproof tin roof, loopholes and projecting enclosed stone porches designed to increase the line of defense fire (Sutherland and Hornby 1967). For both military and practical purposes, the buildings were strategically situated overlooking the locks where the lockmaster could clearly view the approach. Outbuildings around the houses were erected out of the line of fire and the grounds were used for gardens and the raising of livestock to supplement the diet of the lockmaster and his family.

By the time of Confederation in 1867, fears of American expansion into Canada had subsided and the importance of the canal for military transport had dwindled. As the defense orientation faded, grumbling over the unsuitability of the lockmasters' houses as domestic quarters amplified. At Chaffeys, complaints were registered concerning the damp and unhealthy conditions of the building (Tulloch 1975). Over time, all of these buildings underwent some degree of modification to make them more inhabitable (Fig. 2). Generally, as at Chaffeys Lock, structural improvements consisted of filling loopholes, attaching various additions (often in the form of a second storey and kitchen) and, as the technology developed, of introducing such utilities as plumbing, electricity and telephone. Barns and sheds were erected where required and the grounds continued to be utilized for livestock and gardens (Tulloch 1975).

The position of lockmaster with its inherent responsibilities and housing benefits was regarded as prestigious in the small isolated communities along the canal. The initial appointments had been granted to literate and conscientious soldiers of the Royal Sappers and Miners as recompense for their role in the construction of the Rideau. When a lockmaster retired, the Ordnance board

usually allowed the position, and hence the house, to pass on to his son. This custom continued until late in the 19th century when the canal came under the jurisdiction of provincial authorities; after this time, patronage played a major role in the selection of lockmasters (Tulloch 1975). The appointments at Chaffeys Lock exemplify this pattern of military appointment, inheritance, and finally political patronage.

The first lockmaster at Chaffeys was William Fleming, a corporal of the 7th Company, Royal Sappers and Miners. His stepson, James Simmons, inherited the position in 1857. In 1894, the position was granted to Simmon's half-brother's son, Henry Fleming, largely due to pressure from a local politician (Tulloch 1975). It is interesting to note that the major renovations to the lockmaster's house coincide with Henry Fleming's appointment to the position. The second storey, summer kitchen, and probably the cellar entrance were added at the initiation of his occupation of the building. When Fleming retired in 1929, the position was granted to a World War I veteran, Herman Warren of Newboro. He was succeeded in 1956 by William McIntyre of Kingston who was still lockmaster in 1964 when the house was vacated and the summer kitchen demolished (Fleming 1981). The building has not been occupied as a residence since that date. Public washrooms were installed by Parks Canada in the reconstructed facade of the woodshed and the building is presently being renovated for offices and interpretive displays.

Archaeology

Archaeological investigation at Chaffeys Lock was limited to areas of proposed disturbance for Parks Canada development and building maintenance. Only two test pits were excavated; one where ground disturbance was required to install a cement pad at the foot of a proposed entrance ramp, and the other by the cellar entrance for information related to the dating of that feature.

Stratigraphically, three stages of occupation were distinguished during the excavation and their date ranges were refined via material culture analysis. These periods encompass one of military orientation beginning with the defensible house construction in 1844 and its occupation by Corporal William Fleming's family and that of his stepson James Simmons; the rehabilitation period beginning in 1894 with the occupation by Henry Fleming's family and including the Warrens' and McIntyres' residency; and finally, the re-adaptation period beginning in 1964 after the house was abandoned as a residence and was renovated for public purposes. The following examines the the archaeological record in view of the historic character of these three phases.

The Military Phase: 1844 - 1894

The hilltop location chosen for the lockmaster's house in the 1844 period reflects the dictates of the Ordnance board on these defensible dwellings. As mentioned earlier, the original building was loopholed and had north and west porches overlooking the locks below and the approach from Lake Opinicon. An 1850 Ordnance map of Chaffeys shows the slope fenced and cleared of obstructing bushes (Fig. 3). Outbuildings, including a kitchen and privy, are set off well to the south out of the line of fire. Although, the building never was required to withstand attack, an excavated Royal Artillery button, probably from the lockmaster's uniform, attests to the military character of this era.

Figure 4 shows a plan view of the layout during the military phase and locates the excavation units relative to the structure. It also indicates through pie diagrams, the proportional quantity of artifacts accumulated in each test area during the 1844-1894 period. The diagrams are divided into kitchen, activities (including personal items), construction, and faunal to enhance comprehension of the deposition.

Overall, the back yard excavation had only 37 per cent of all artifacts excavated from this time frame. Of this amount, the deposit contains mostly architectural debris and very little kitchen, activities or faunal material compared to the front yard assemblage. The front area with 63 per cent of the artifacts, consists of almost half kitchen associated items constituting 85 per cent of the total for this group during the military phase. This distribution is somewhat peculiar since the back yard test pit is actually closer to the kitchen outbuilding. The back-unit is, however, not aligned with the bottom step of the west porch and the kitchen. Conversely, the front yard test pit is located in the line of traffic moving between the front and back doors and to the lock building below.

During this early phase until 1871, the lockmaster was expected to be 'on duty' twenty-four hours a day and for anyone occupied outdoors, only the north yard offers a clear view of the entrance to the locks (Tulloch 1975). This factor must have served to focus activities in the vicinity of the front yard as evidenced by a higher count of activities artifacts. Considering the higher ratio of kitchen items in the front yard, it is probable that outdoor food service or dish washing might have occurred here. An accumulation of sweepings projected from the north door should also be anticipated.

Rehabilitation Period: 1894-1964

When James Simmons retired in 1894, he bid farewell to the home in which he was raised and which had been left

virtually unchanged since his stepfather's day (Fig. 1). Henry Fleming's arrival brought rehabilitation of the building, altering it practically beyond recognition. The major renovations include the addition of the second storey, the summer kitchen and milk shed, and the woodshed (Fig. 2). All of this construction activity is known to have occurred at or just after 1894 (Tulloch 1975). Presumably, the original west porch was removed immediately prior to the addition of the summer kitchen, although the exact date of its demolition is unconfirmed. The cellar entrance which did not conform to the military character of the earlier period, may also date to (or shortly prior to) the 1894 renovation period. A turn moulded bottle fragment found in the footing trench establishes its earliest possible construction date at 1870.

The effect that these structural additions had on the use of the yard areas was to focus domestic activity at the back of the house. Compared to the earlier phase of occupation, a complete reversal in the concentration of debris accumulation occurs (Fig. 5). During the 1894-1964 rehabilitation era, over 75 per cent of the artifacts were deposited in the back yard, an increase of double that of the previous period. Despite the fact that the front yard test pit is still situated in the vicinity of both the north porch exit and the front door to the summer kitchen, more debris accumulates in the south yard. Note that although the activities count is comparable in both areas, the kitchen, faunal and construction ratios are higher in the back yard. The back yard test pit is, however, now contiguous to the door of the milkshed, the cellar entrance and en route to the woodshed. The niche created between the cellar entrance and the milkshed in which the excavation is located probably also acts as an artifact 'catch' to further increase the concentration there.

An apparent shift in outlook towards increasing emphasis on aesthetic appearance over functional convenience also influences artifact accumulation in the rehabilitation period. Examination of a May 1930 photograph illustrates the influence of 'Picturesque' landscape treatment on the front yard area; note the rustic bench, tree plantings and neatly cropped lawn (Fig. 2; Van Ravenswaay 1977). A glimpse of the woodpile can be seen on the left of the photograph. Its location behind the fence near the back of the house demonstrates that this activity was relegated to the back yard.

The decrease in the amount of debris encountered in the front yard of the lockmaster's house demonstrates the dramatic result that this developing concern for aesthetic appearances may have on artifact counts. Not only has the front yard accumulation decreased relative to the back yard within this phase, but it is also substantially cleaner in comparison to the previous period (Table 1). The reduction

in artifact count is even more significant considering an increase of 18 years over the previous occupation period (Fleming 1981). In terms of accumulation per annum of occupation, the front yard amasses garbage at less than half of its previous rate even though the total assemblage for this phase is significantly larger. Only the activities group actually increases in the number of artifacts accumulated in this period (Table 2). This suggests that the front yard was still being utilized for domestic and leisure activities. Note, however, that the back yard deposit also exhibits an increase in activities items, presumably due to the concentration of domestic chores in the back.

Re-adaptation Period: 1964 - 1981

In the final re-adaptation period, the trend towards reduction of debris in the front yard is even more pronounced. This 17 year period begins in 1964 with the house abandonment, and the demolition of the summer kitchen, milkshed, and the woodshed. These activities were followed by laying topsoil and sod in the area of the summer kitchen and over at least part of the north yard. Subsequently, Parks Canada reconstructed the facade of the woodshed to serve as washroom facilities for public use.

Predictably, the rate of debris accumulation following abandonment was greatly reduced compared to the occupation phases (Fig. 6). No faunal material was deposited in either area but the quantity of debris in the back yard as compared to the front yard is even more pronounced than in the previous period. This is accentuated since the assemblage is small and much of the back yard deposit consists of pane glass (likely primary refuse from breakage of a window located above in the south wall of the house). Regardless, the kitchen and activities groups are more substantial than in the front yard. Since the house was primarily utilized for its public facilities, and access to the womens' and mens' washrooms require passage from the west past the back and front test pits respectively, this posed a question as to what was causing the concentration of debris at the rear. The conclusion that females litter more than males was considered absurd. A more acceptable answer, and one suggested by the minute size of the artifacts found in the front yard, is vegetational differences between the two areas.

The sodding activity in the north yard was significant both in sealing the earlier contexts and in producing a surface that discourages litter deposition and accumulation. Modern maintenance equipment and the procedure of cutting and raking clippings also serve to remove any vestige of refuse. Since the back test pit is in an inconspicuous corner at the rear, less care was exercised in tending it.

When encountered by the excavator, comparatively high weed growth had been allowed to develop along the south wall and west edge of the cellar entrance. This vegetation probably served to accentuate the 'catch' aspect of the corner as compared to the open, short cropped lawn in the front yard.

The effect of landscape treatment on reducing artifact accumulation in prominent places assumes a larger role as time progresses from the military through the rehabilitation to the contemporary readaptation periods. On the Rideau Canal specifically, there are records as early as 1890 of the superintending engineer reprimanding lockmasters for not maintaining their stations. His complaints concern tall weeds obstructing paths and are oriented towards maintenance considerations. Around the turn of the century, the lockmasters at the Smiths Falls and Edmunds lockstations were complimented for personal expenditures and efforts exerted on gardens beautifying their homes (Tulloch 1975). Later in the 20th century as commercial transport was superceded by pleasure craft traffic, the emphasis placed upon the picturesque appeal of the Rideau increased. In keeping with this attitude, grounds maintenance and embellishment at the lockstations was officially endorsed. At present, Parks Canada manages the canal as an extended heritage park and places particular emphasis on a tidy and close cropped appearance. Many of the canal's historic structures have been converted for public and museum use. The character of the artifact assemblage and low accumulation rate reflect the orientation of the present phase.

Conclusions

Obviously statements based on such minimal sampling are tentative and further excavation is anticipated to verify both the site specific and more general assumptions reached in this paper. At Chaffeys Lock, testing in the vicinity of the original west porch door and kitchen and in potential 'catch' areas combined with stratified random sampling would provide a more substantial research base. Such investigation could more purposefully address the impact of structural change on activity areas and use of outdoor space. The Chaffeys site is suited to this pursuit since the soil matrix in the yard areas can be correlated to specific phases of construction and occupation. Similar testing at other lockmasters' houses along the canal would relieve the potential hazard of idiosyncratic deposition and accumulation patterns at any one site. Finally, the effect of vegetational differences and landscaping activities must be further examined especially at sites along the Rideau where the emphasis on maintenance of aesthetic appearances for public view assumes a larger role from the military heritage through rehabilitation and re-adaptation phases.

Small scale salvage archaeology projects along the Rideau have been oriented towards essential engineering and heritage preservation concerns. Because of the nature of the Chaffeys site, this project has addressed these issues while attempting a more wholistic approach towards the examination of the artifact assemblage within the historic framework. Although a rudimentary exercise in archaeological technique, this approach, where applicable, may help to interpret the evolution of the environment of those who worked and lived along the Rideau Canal.

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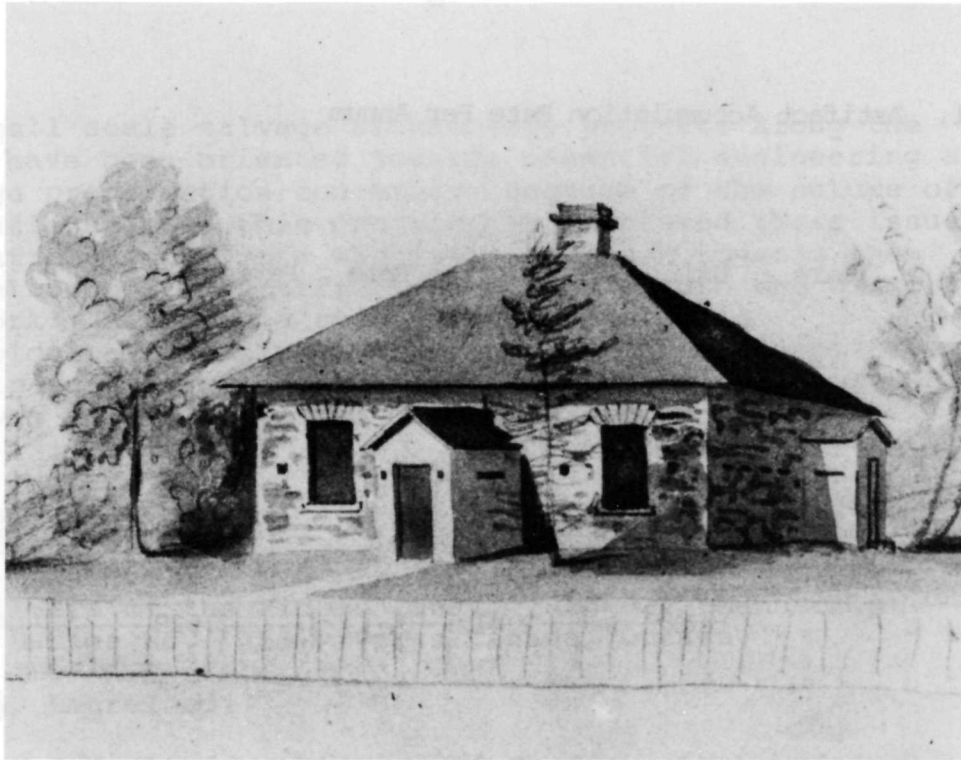
Table 1. Artifact Accumulation Rate Per Annum

Period	Years	Unit	Accumulation Rate	Period Total
1844-1894	51	front	2.882	4.607
		back	1.725	
1894-1964	69	front	1.304	5.55
		back	4.246	
1964-1981	17	front	0.118	2.529
		back	2.412	

Table 2. Artifact Totals of Accumulation Matrices by Group

Period	Yard	Kitchen	Activities	Architecture	Faunal	Total
1844-1894	front	70	9	61	7	147
	back	12	1	72	3	88
1894-1964	front	23	11	54	2	90
	back	84	15	173	21	293
1964-1981	front	1	1	0	0	2
	back	9	3	29	0	41

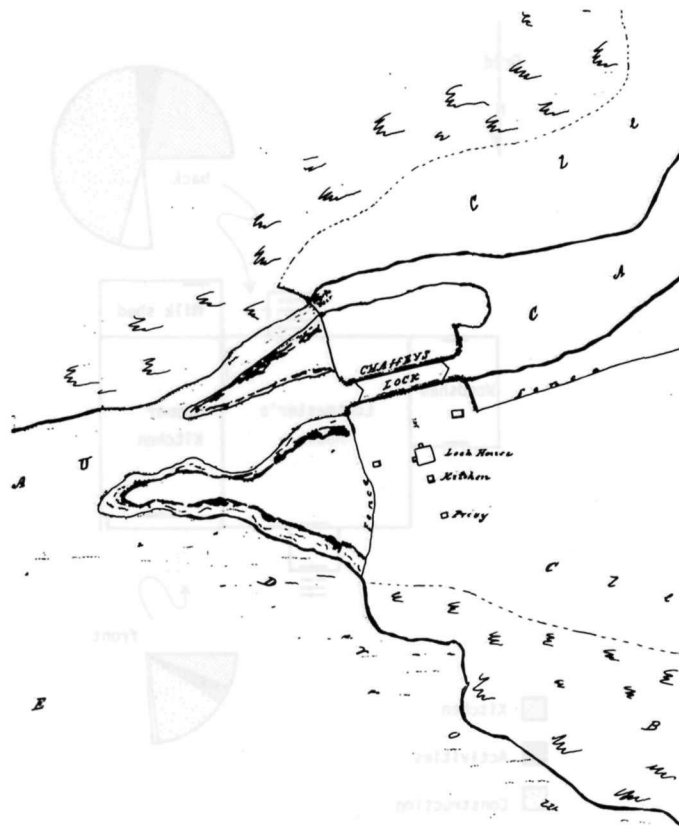
4 Military Period: 1844-1894 showing the relative deposition of occupation accumulations in the front and back yard test areas. (Drawing by S. Plouffe.)



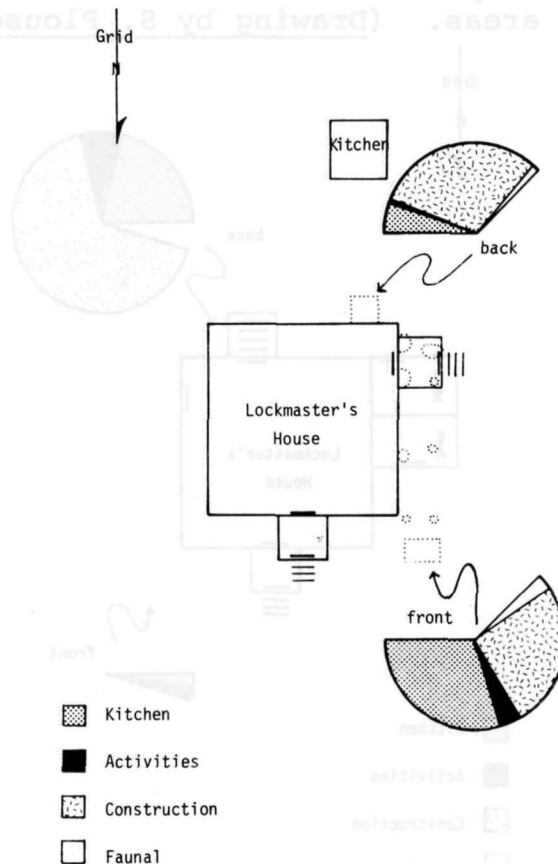
- 1 The defensible lockmaster's house at Poonamalie, 1854 water-colour by Edwin Whitefield. (Public Archives of Canada; C-13299.)



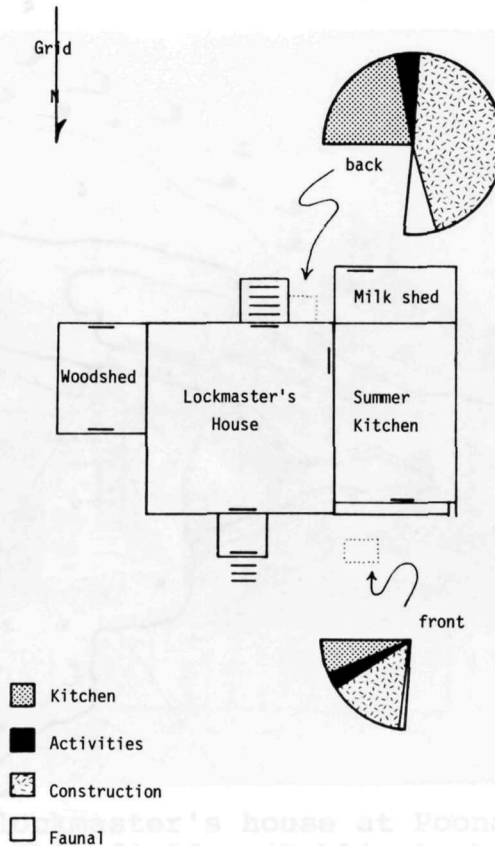
- 2 Additions to the lockmaster's house at Chaffeys Lock (Department of Transport; May 1930.)



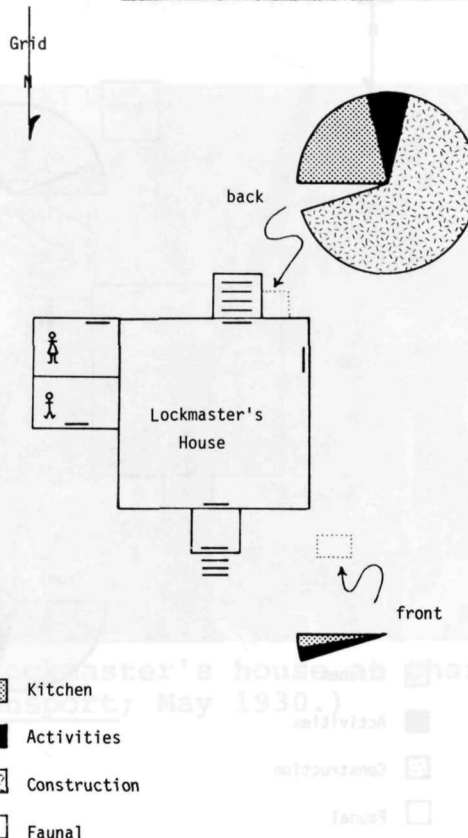
- 3 1850 Ordnance map of Chaffeys Lock. (Public Archives of Canada; R-410-Rideau Canada 1851, Chaffeys Lock Station.)



- 4 Military Period: 1844-1894 showing the relative deposition of occupation accumulations in the front and back yard test areas. (Drawing by S. Plousos.)



- 5 Rehabilitation Period: 1894-1964 showing the relative deposition of occupation accumulations in the front and back yard test areas. (Drawing by S. Plousos.)



- 6 Re-adaptation Period: 1964-1981 showing the relative deposition of occupation accumulations in the front and back yard test areas. (Drawing by S. Plousos.)

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