Les galets de la grève de Charlestown proviennent des falaises (quartz et ardoise) et du large le silex est poussée par la mer. Quelques blocs de granite ont probablement été utilisés pour les murs du port. Mais certains galets proviennent peut-être des naufrages, quand des bateaux laissaient tomber du lest quand ils chargeaient leur cargaison de minerai ou de kaolin dans le petit port. Si vous voulez apprendre plus sur la géologie régionale et le paysage il est possible d'acheter un guide, il y a un website et un musée dédié au kaolin à Wheal Martyn. Le S.I. (Tourist Information Centre) à St Austell vous aidera.

Los guijarros de la playa de Charlestown provienen de los acantilados (cuarzo y pizarra) y del fondo marino (flint, arrastrado por el mar). Algunos de los bloques graniticos probablemente tienen su origen en los muros del puerto. Pero algunos de los guijarros pueden provenir de naufragios o cargas abandonadas en el pequeno puerto por barcos que comerciaban con metales o arcilla para la produccion de ceramica. Si quieres saber mas acerca de la geologia, historia o paisajes locales, existe una guia a la venta, una pagina web y tambien el museo Wheal Martyn China Clay. La oficina de informacion turistica en St Austell ofrecera toda la ayuda necesaria.

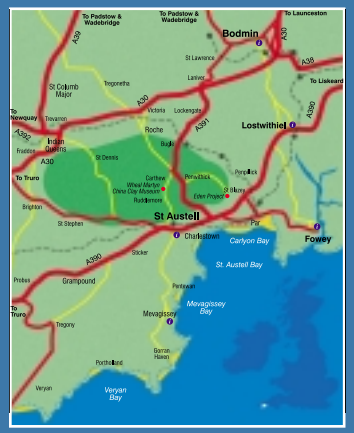
Viele der Kieselsteine am Strand in Charlestown kommen ursprünglich von den Klippen (in erster Linie Quartz und Schiefer). Andere wurden höchstwahrscheinlich auch durch die Meeresbewegung von weit draussen an den Strand gerollt (z.B. Feuersteine). Die abgerundeten Granitblöcke dagegen haben ihren Ursprung wahrscheinlich in den Mauern des Hafens. Aber einige der Kieselsteine mögen durchaus von Schiffswracks stammen oder von Schiffen, die Ballast loswerden mussten, bevor sie Metallerze oder Porzellanerde in dem kleinen Hafen aufluden. Interessenten an der örtlichen Geologie und Landschaft können einen Führer erwerben. Zudem gibt es eine Website, und auch das Wheal Martyn China Clay Museum ist einen Besuch wert. Die Touristen Information in St Austell hilft Ihnen gern.

Shipwrecked pebbles?

Foreign visitors?

Chattering flints?

Charlestown on the Cornish Riviera near St Austell may be the home of the Shipwreck & Heritage Centre and of Square Sail's fleet of square riggers, but shipwrecked pebbles on the beach? ***Read on … !***



More on the websites:

www.**cornish-riviera**.co.uk
www.**earthwords**.co.uk

& there's also a guide you can buy for £2.75

Explore the Landscape & Rocks of the St Austell area

Text and photos: *John Macadam, Earthwords Tel/Fax 01208 72578 - www.earthwords.co.uk*

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Strangers on the Shore?

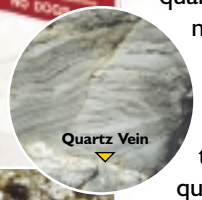
pebbles on Charlestown beach

A guide to the strange lives of pebbles on Charlestown beach

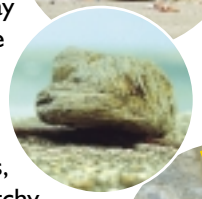
Cornwall welcomes you / Kernow a'gas dynargh

Strangers on the Shore?

If you come to Charlestown when the sea is calm, it's hard to see why all the pebbles are rounded. But come when the sea's rough and they are all being tumbled about, bashing into each other, and into the harbour walls. Then it's a different story!

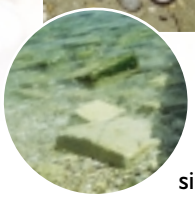


The warning about cliff falls is serious. The cliffs are made of slate cut by quartz veins, and rockfalls bring new material for the sea to work on. But there are very few slate pebbles on the beach: they get worn away too quickly. The toughies are quartz – the white pebbles, often with bits of other colours – and flint. Most of the flint is brown but it can be found in many colours, from white through buff, grey, blotchy blue to black. Occasionally it contains fossils.

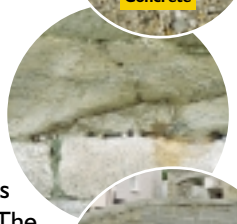


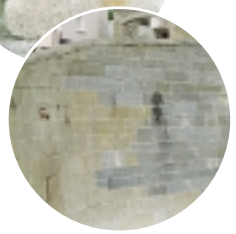
But flint like this only comes from the Chalk – and there are no layers of chalk here. ***Maybe there was once, but it has all dissolved away and only the flint is left? Or maybe the flint has come from the chalk way out on the floor of the English Channel, and as the sea level rose after the last Ice Age the flint pebbles were pushed in front of the advancing sea? Maybe there's another origin?***

Some of the flints have 'chatter marks', a rather fanciful name for the curved cracks thought to be formed when they crash into each other in the surf. 'Surf-rage marks' more likely!



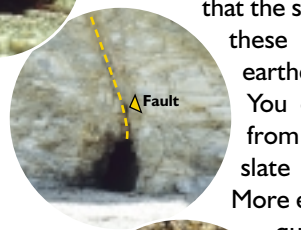
What else can you find? Well, there are granite pieces. Granite is found in a range of colours and textures in Cornwall, so the pieces here are, too. Some of the pieces of granite are big and were obviously shaped at one time. These probably came from out of the harbour wall, but the sea has rounded all their edges. Granite is made up of different crystals – and some concrete blocks can look similar at first sight. But there's a slight age difference: the granite is about 270 million years old, the concrete at most a few tens of years.





You can see how the sea has rounded the granite in the sea wall, just by hurling pebbles and sand at it. The slate above the granite wears away faster. At the back of the beach the wall is made of granite and grey limestone. The limestone wears away faster than the granite, so the engineer had the granite put at the bottom where most of the sea's energy is concentrated.

Further along, beyond the sea-wall, you can see that the slates in the cliff have been faulted. Each of these faults would have produced an earthquake, but long before humans! You can find the broken up rock from a fault as pebbles: broken up slate 'stuck' together by quartz. More exciting are the stripy chunks of quartz which often contain crystals of pyrite – fool's gold – or copper minerals. The land behind the beach is riddled with mineshafts and tunnels from copper mines. There are drainage tunnels – adits – in the cliffs. Built by miners, not smugglers. Though maybe smugglers used them! You can also find slag, waste from a smelter or foundry. It's usually a black heavy material, with bubbles 'frozen' into the rock.



But if you've kids with you, just searching for pebbles can soon become dull. ***Why not try making faces*** – *here with two black eyes (of slag) and a very white nose (like a cricketer with sunblock lotion?)* made of limestone? You'll even find a ready-made face or two! ***This one was a boxer?***

And if that gets boring kids could always try to make a rainbow from the pebbles. There are so many varieties here that it is possible, and you can always cheat by finding bits of wave-worn coloured glass.

We'll never know where all the pebbles on the beach came from, and of course we know even less how they got there. Before the harbour was constructed in the 1790s, boats were beached to be unloaded, and were then loaded with copper ore and china clay. No doubt some were wrecked on the same beach. ***Maybe the flint was ballast?*** Certainly a few of the pebbles do not look like any rocks found in the South West, or even in the UK. Cornwall welcomes visitors from all over the world – including pebbles!

Kernow a-dhynargh gwestyon dyworth oll an norvys - buly gansa.