

North East Derbyshire Industrial Archaeology Society

NEDIAS Newsletter No. 23 – August 2006

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Chairman's Comments:

A few weeks ago I visited a Martello tower at Seaford in Sussex. Never having been actively used to defend England, it found new life, amongst other roles, as a roller skating rink but had now become the town's local history museum. Most of us will have found items familiar to us in our early years when exploring museums but Seaford's collection of such recent items as electric typewriters and word processors was quite astounding. So what, you ask? Well, thanks to the advances of modern technology I am writing this in Chesterfield Public Library while Virgin and BT continue to shout, "it's not our fault" to each other. Hence readers will be spared, for once, a long diatribe from the Chairman. Right now I am sorely tempted to add all my computer paraphernalia to Seaford's collection!

Since our last Newsletter, we have again enjoyed a summer evening at a local industrial heritage site, with the visit in mid-June to Crich Tramway Village. From the experience of our visit, with its tram ride, guided tour and supper, it is no surprise to find that AIA have made the 2005 Conference Award to Crich after their visit last September. Nearer to home, the AIA 2005 Initiative Award was made to the Friends of Pleasley Pit, it having been one of the sites visited during the conference day organised by NEDIAS.

Another item to celebrate very soon is the publication of the first NEDIAS Journal, now ready for printing. While thanks are due to the contributors for their efforts, it is due to the persistence, patience and dedication of Cliff Lea that we have reached this milestone achievement. What better start could we want to the coming season of lecture evenings - hope to see you there!

David Wilmot

WHAT'S ON?

NEDIAS Lecture Programme, 2006

When: Meetings are usually held the second Monday of each month, starting at 7.30 pm.

Where: Rowland Hill House, Boythorpe Road, Chesterfield (opposite the swimming pool).

11 September 2006	<i>Mike Taylor:</i>	"The Sheffield and South Yorkshire Navigation"
9 October 2006	<i>Paul Chander:</i>	"Peak District Extractive Industries"
13 November 2006	<i>David Jenkins:</i>	"A History of Sheepbridge Works"
11 December 2006	<i>Mike Bennett:</i>	"History of Markhams"

Other diary dates

7-10 September 2006	Heritage open days – see English Heritage web site for details of sites open to the public
9 September 2006	Belper Millworkers' Housing, walk led from Strutt's Belper North Mill. 01773 880474 for details. Start 2pm
9-10 September 2006	Friends of Pleasley Pit – Open Weekend, 10am to 4pm both days. Admission is free, with access available to both Engine Houses and the South Headgear Complex, displays of equipment and archives, also refreshments available. Sunday (only) flypast of Lancaster bomber (subject to availability).
14 October 2006	East Midlands Industrial Archaeology Conference, EMIAC 72, at Wirksworth, and with a railway and quarry theme. Details from Railway and Canal Historical Soc, 141 Allestree Lane, Allestree, Derby DE22 2PG.
29 October 2006	Scarsdale Local History Fair, Winding Wheel, 10.30 am – 4 pm. See the NEDIAS display, and a host of other stands. Can you help on our stand?

Mid Summer Visit, 2006 – Crich Tramway Village

A fine summer evening saw a large group of NEDIAS members at their own private view of the museum's exhibits; it really was an excellent evening and our guide I think appreciated the great interest and enthusiasm from our party. Indeed, he knew of the origin of just about every item on display, every lamppost, length of track, vehicle, even down to the splendid cast iron gentlemen's urinal.

Following a tram ride up the track, we adjourned for a really delicious and varied buffet meal at the Red Lion, an amazing Victorian pub, trans-located lock, stock and barrel from Stoke-on-Trent. Some of us even decided to test whether the beer was original, and I can report great satisfaction.



This year's summer visit will certainly be very difficult to follow for 2007!

Letter from America

Paul Smith

In the third quarter of the 19thC a huge silver deposit was found at a location 60 miles east of the modern day city of Phoenix central Arizona. It became the site of a mining community centred on the Silver King Mine; and grew rapidly to employ hundreds of miners, process workers and their families. For a time it was the biggest silver mine in the US.

How do I know this and why do I think you might be interested? Well, for a week in February this year I joined a group of volunteers who were discovering and mapping the remains of those early hectic years. Whilst Britain was at the peak of its industrial power and nearing the end of its imperial expansion the US was still pushing westward and consolidating its territorial gains and exploiting the natural resources.

The History

It was on the back of the US army's drive to subdue the Native American Indians and in particularly the Apache that settlers and mineral prospectors began to drive into the south western deserts looking for land and wealth.

Although accounts differ, it seems that a soldier called Sullivan discovered the silver lode that was to become Silver King whilst helping to build a supply road in November 1870. This road was never finished beyond a track and the military camp at Pinal, which it was meant to serve, was abandoned. Naturally, as in all good legends he kept the find secret, until, sometime later after discharge from the army he showed it to Charles G Mason, a farmer for whom he was working, but without divulging its location and then Sullivan disappeared (supposedly killed by natives). Several attempts were made to locate the source without success. In March 1875, Mason joined four others including three of his neighbours, Reagan, Long and Copeland and one unidentified individual to work copper ore found two years earlier by a party including, Reagan, Long and Copeland. However they were attacked by Apaches and the unnamed prospector was killed, they took his body for burial near to the road Sullivan had worked on and found the Sullivan's silver sulphide outcrop. Mason, Long, Reagan and Copeland registered their claim on March 22 1875 and was the first entry in the Book of Mines, in Florence, which had been created Pinal county seat on the 1st February 1875. The four miners collected 1500lbs of ore, hauled it to Tucson 100 miles to the south and accepted \$800 for it.

The discovery sparked a "rush" and Florence and other settlements were depopulated as men rushed to the strike area. The discoverers in the meantime began sinking a shaft on the ore in mid April. The six feet square shaft was down nine feet in mid May, 30 feet down at the end of June. By the autumn a 70-foot drift and two shafts had been sunk and 42 men were employed. The town soon grew to several hundreds of miners and their families. Initially ore was transported to the Pacific coast for refining, but a plant was built at Pinal five miles away, this town also grew rapidly to around two thousand people. However the price of silver fell towards the end of the century and both towns declined and the mine closed in 1888, whilst Pinal by 1891 had only six residents. The area recovered though with the discovery of copper and the existing town of Superior was born in the first decade of the 20th C.

Passport in Time.

That's a brief history of silver mining in Pinal County Arizona, how did I come to be there? In September 2005 I made my first trip to USA with friends we camped for three days in Grand Canyon, visited the Arizona desert and lots of tourist things and couldn't wait to return. So when I saw on the web a US Forest Service initiative called Passport in Time (PIT) calling for volunteers to help on archaeological and conservation projects I applied. Fortunately I was accepted and I joined a team based in Superior, Arizona on Monday twenty second February for five days surveying and mapping at the Silver King Mine complex.

The group I joined comprised, two ex-professional surveyors, four metal detectorists and two experienced "mappers". Forest Service field archaeologist Steve Germick and his colleague Michael Sullivan led the group. I was naturally a bit apprehensive, but different language usage was the only minor problem Winston Churchill's aphorism "two nations divided by a common language" was very apt. There was a nice old-fashioned feel to degrees Fahrenheit and feet and inches (reversing 30 years of metrication), which were used in the survey.

Monday morning, the first morning after the flight, started with, toast, pancakes and unlimited coffee at the Mexican eatery across the road from the meeting point. A sluggish walk across the road, (made mental note to reduce number of pancakes and cut out toast, next time), to meet the team for introductions (most of the party were PIT veterans) and an overview of progress to date, this being the eleventh season working at Silver King.

The Silver King Mine was part of an extensive ore processing complex, consisting of the mine and its town, and Pinal, a processing plant again with its own town, some distance from the mine and Peachville a satellite settlement close to Silver King Mine. The priority for the 2006 season was to complete the Pinal survey, map in the route ways and survey the surface remains in Peachville. Pinal town has survived only as earthworks and some foundations, whilst the

processing plant can be traced by extensive stone foundations and massive machine plinths, much of the superstructure of the buildings were dismantled and used to build the later settlement of Superior. We recorded the route of a shallow track-way formerly the main route for ore from the mine five miles away. We looked for surface detritus, tin cans, glass bottles and cast iron parts, noted them and drew any significant items that might be useful for dating purposes.

The metal detectorists had also covered the area finding such items as mule shoes and nails, cut nails and cartridge cases, which were useful for dating and notably an opium pipe. This last item may possible tie in with a find of Chinese coins found previously. Although if legend is to be believed, Wyatt Earp's consort, "Mattie" Blaycock died in Pinal on 4 July 1888, aged 38 after a night spent drinking and taking laudanum. Opiates were not confined to the oriental quarter of town by any means. This exercise in field walking, open necked and head bent, exposed a pale under prepared British skin to the Arizona desert sun. Resulting in a painful visit to the Wal-Mart pharmacy 20 miles away in Claypool, for mega sun block and after sun cream.

Tuesday. Two pancakes and two mugs of coffee, and sporting a bandana, with US eagle, a Mexican straw hat (really) and a full coating of mega-block the plucky Brit was ready again. The temperature peaked at around 82F, spring in the desert, but unusually was over 130 days since the last measurable rain. The Arizona desert, more accurately the Sonoran Desert is not the endless



vista of rock and sand dunes of Arabian or Saharan fame; it is a particular type of ecology adapted to less than ten inches of rain per annum (often less than six). The landscape here is a rolling stony plain dissected by dry river valleys forming steep gorges, ringed by high mountains and occasional sheer sided buttes. The geology is volcanic, with multi-coloured granite, gneiss and schist rocks and boulders, with a typical elevation of 3500 feet.

The desert flora of mixed Chaparral/Sonoran desert scrub is dominated by the saguaro cactus, a tall, spare sentinel with arms pointing skyward and much loved by Western movies. Creosote, mesquite and paloverde bushes, scrub oak, prickly pear and cholla cactus form a sometimes dense undercover and where there is some moisture, by river or spring, cottonwood and sycamore trees thrive. This part of the desert is under the control of the US Forest Service. Although not a forest in the accepted sense, since much of the tree cover was removed to provide fuel for the mining operations in the closing years of the 19th century, it is rightly recognised as a place of outstanding natural beauty requiring Federal protection. The Forest Service is uniquely equipped to balance the competing requirements made of this area, including industry, heritage, ecology and recreation.

Tuesday was spent assisting the two surveyors, Dick and Dick, (it's true), and who between them had 110 years surveying experience, to complete the detailed survey of Pinal. The task consisted of adding detail to the previous surveys, and confirming locations of new features. We were a team of four the lead surveyor and an assistant on the staff and the other surveyor at the theodolite and EDM station reading the machines and dictating the results to his assistant. In

the afternoon the assistants changed roles. The survey concentrated on an area around the ore-stamping mill. The ore was reduced on multihead stamps powered by steam, this particular area was the nearest suitable water source for the engines. The mill was built on the side of a small hill, using gravity to progress the ore through the operations. The stamps foundation blocks were visible, with large diameter threaded bar still protruded from them. The tailings had disappeared, being worked and reworked by successive mining regimes over the years. No machinery was left on site. Although its layout could be interpreted from a set of high quality photographs taken in advance of a promotion to sell or refinance the business around the turn of the 19thC.

A small local museum at Apache Junction has acquired a 20 head-stamping mill from a derelict site in New Mexico. It's easy to see how portable the equipment was, the framing was wood, the stamp heads were cast steel (I think), and were lifted by cams on a shaft and appeared to fall under their own weight. The ore was crushed and fell through holes in a table below the stamps. The whole unit was relatively light weight, although it would need strong foundations, it could be dismantled and transported by mule and cart. Mules incidentally were the favoured form of motive power preferred to horses, and photographs show 20 strong mule trains pulling ore wagons from the mine.

The final part of our surveying exercise was detailing an area beside the Queen Creek, a small wooded stream much reduced by the drought and carrying some very unpleasant effluent from the Superior water treatment plant. In the past though it provided water for processing and steam raising plant since the ore reduction processes used a variety of heavy metals and toxic chemicals, Queen Creek is probably in as good a shape as it has been for some time.



Wednesday, Thursday and Friday morning, were spent mapping Peachville, Steve Germick described it thus “scattered remains of one roomed structures and features associated with 19thC trash.” That is exactly what we found. In fact Peachville owes its name to the empty

peach cans found around the site, their contents consumed by the miners. A serious fire in 2004 had burned away much of the dense undergrowth which characterises the desert flora, to reveal the remains. Apart from charred trees and skeletal, blackened saguaro cactus pointing crazily, the lack of vegetation had resulted in severe rain water run off, which had created deep gullies and washed away some archaeology including the now mythic peach cans. Steve marked the areas to be investigated the metal detectorists then scanned them and marked finds with surveyor's arrows. The mapping, a technique that was new to me, was again a team effort. One person headed off with a 100-foot tape and located the feature to be recorded, reading back the distance in feet to the datum where the second person was stationed. A bearing was then taken by the second mapper from datum to the feature and recorded.

When a particular feature or area had been recorded, it was drawn to scale on squared paper labelled and the next feature started. By moving datum a large area could be mapped by two people. Steve recorded the datum points by GPS; they could then be drawn onto a large-scale plan of the area. Peachville was a small settlement with four or five dry-stone walled buildings, there was evidence of corrugated iron and large section timbers, probably for roofing, a well and possibly tent platforms, claim registration points and a couple of mysterious stone enclosed features, latrines possibly. A couple of vitrified adobe bricks were found besides the general detritus of settlement, nails, brass cartridge cases, mule shoes and glass ware. Life was clearly not idyllic, since an almost complete bottle bearing the inscription Pain Killer was found. It only remained after the mapping to record the distribution of the metal detectorists finds, enter them on a pre-printed form, tidy up the drawings and sketch the finds and we could adjourn to The Los Hermanos Mexican Restaurant for lunch, passport signing and farewells. Passports are provided by the Forestry Service, and stamped to prove the bearer has participated on a PIT project; I am now the proud owner of such a passport.

That was not quite the end for me, being a complete archaeological bore I welcomed the invitation from Michael to visit a rescue dig, which was being carried out in advance of a road improvement scheme near by. It was a pre-historic Native American settlement, with hut pits, garden plots and water management system. This is a feature of this pre-historic culture, the Saloon (Salt River) Natives, who developed a sophisticated irrigation system involving hundreds of miles of canals and tributaries to feed their fields. Some of which have been re-used in modern times to supply water to Phoenix, but that's for another day.

What did I get out of the experience besides sunburn and cactus spines? A solo visit to a new area is an experience, to learn a little about a different culture is also good, to have helped in a positive way to record and conserve elements of that past culture is a bonus and to do it with a group of dedicated and friendly group was special. Would I do it again? Yes. I'm determined to get another stamp on my passport someday.

Acknowledgements.

I'm grateful to Steve Germick for allowing me sight of his unfinished history of the Silver King Mine from which I have unashamedly borrowed.

The quote is from Steve's Forest Service welcome instructions and project notes.

Other material is from two Web based sources, Alan Cowan,

<http://personal.riverusers.com/~fw/AGT/Searches/Superior>. Superior, Pinal, Silver King, Queen Creek, Picket Post, Magma and Boyce Thompson, Arizona: a brief history.

Also, <http://www.geocities.com/zybt/suhist>, History of the Superior Region.

Going, going, gone – Dema Glass



In Chesterfield, the 12-hectare DEMA Glass site has been steadily under clearance, and soon a globally respected glass manufacturer is to be replaced by a new soccer stadium. The last visible remnants, the amazingly tall chimneys, are to be demolished as we go to press.

The British Thomson Huston Glass Factory began small scale operations on the site in 1922, and within 10 years the site had expanded to include laboratories, offices, warehouses, recycling facilities, packaging sheds, silos for raw materials and large glass furnaces.

As DEMA, the company grew to become the UK's largest domestic glass manufacturer, in addition producing vast volumes of stemware for hotels and pubs, scientific glassware, pharmaceutical tubing, as well as fluorescent tubes and light bulbs. It merged in 1971 with the famous names of Thomas Webb and Edinburgh Crystal within the Crown House Group.

DEMA's technical abilities and pioneering development of glass manufacturing technology were well known, and they licensed their special process, a type of "Ribbon Glass" technology, to companies in other parts of the world. Perhaps this was even part of their downfall.

DEMA's "Ribbon Glass Technology" was a highly sophisticated technology for high speed manufacturing of glass shells for bulbs. The chief feature of this technology was that molten glass flowed in a straight line rather than a rotary path as with alternative glass blowing machines. The very high speed enabled production by this method of up to 1000 pieces of glass shells per minute.

A world beating process perfected in Chesterfield!

The DEMA site has been under investigation and survey by ARCUS, who have been able to draw on a large archive of company records and details of DEMA's previous research, which they report as an almost unique time-line for a 20th Century lass manufacturing company,

Do we have any members who can shed further light on the history, social impact and the special processes carried out by this pioneering company? Could this be an article for our new Journal?

I.A. News and Notes

NEDIAS Journal No 1 - NEW NEW NEW!

This Newsletter has helped to keep us all in touch with local surveys, news, history and items of interest, and it has proved to be part of the cement which has helped to build and meld our Society.

However it is only intended for shorter articles, yet there is the need in this area for a medium that can carry longer papers and details of more serious research on work in this area. The very first **NEDIAS Journal** will shortly be published; this is intended initially to be an "occasional" publication, but with the longer-term aim of publishing annually.

The first edition will comprise over 80 pages, and contents of the first edition are:

Alfred B. Searle's Contribution to the Science and Application of Refractory Materials

Derek Grindell

"The Brimington Brick Company" – north east Derbyshire's brick making in microcosm

Philip Cousins & David Wilmot

A Provisional Account of Clay Cross Company's Housing

Cliff Williams

Cannon Mill and the Walton Bump Mill

Richard Robinson

The Lancashire, Derbyshire & East Coast Railway; an independent railway developed in the latter part of the 19th century

David Wilmot

The Newsletter will of course continue in its current format, but I'm sure you will welcome the new Journal.

Derwent Valley World Heritage Site Discovery Weekend, 28-29 October 2006

Many will remember the success of the World Heritage Site Discovery Day in late 2005, when a large number of activities, exhibitions, displays and tours were arranged at the Silk Mill, Arkwright's Cromford and Masson Mills, Strutt's Belper, etc. This year will build on last year's success, with the event running over two days, and offering much of interest. See www.derwentvalleymills.org for further details.

Scarsdale Local History Fair, Winding Wheel, 10.30 am – 4 pm, Sunday 29 October

Once again, NEDIAS will be exhibiting at the Scarsdale Local History Fair. Last year's event proved highly successful, recording a high number of visitors, and NEDIAS is pleased that the event is to be repeated again this year. If you have any suggestions for exhibits or displays for our stand, do please contact Jacqui Currell or Cliff Lea

Erratum - The Cromford Canal and its Tolls

The Editor inadvertently omitted to include two illustrations of loading permits with David Wilmot's article on Cromford Canal in NEDIAS Newsletter No 22, May 2006; they are shown below.

2581 CROMFORD CANAL May 26 1836
 PERMIT John Eaton on board No. Eaton Boat, No. 121
 to navigate the under-mentioned GOODS:

SPECIES.	Where loaded.	Where landed.	Weight by Bill of Lading.	Dry Inches.	Tonnage Weight.	Miles.	Rate per Ton.	AMOUNT. L. s. d.		
Coal	Portland	Leicester	37		3	6		18	6	

2582 CROMFORD CANAL May 26 1836
 PERMIT Chor: Wigley on board G. W. Horn Boat, No. 1222
 to navigate the under-mentioned GOODS:

SPECIES.	Where loaded.	Where landed.	Weight by Bill of Lading.	Dry Inches.	Tonnage Weight.	Miles.	Rate per Ton.	AMOUNT. L. s. d.		
Goods	Nottingham	Cromford	1 1/2	12 1/2	1 1/2	15	2/6	4	11	3/4
Flour	do	Railway	12 1/2		12 1/2	14	1/2	1	11	3/4
Goods	do	D. Holloway	1/2		2	8	1/6	3	2	
								1	18	11 1/4

2581 : Permit for 37 tons coal bound for Leicester, to be carried 3 miles from Portland's Wharf at Codnor Parl to Langley

2582 : A mixed load, typically of those carried by Wheatcrofts, and by this time off-loading at "Railway" for transhipment to the Cromford & High Peak Railway.

Cromford Canal permit for G. Wheatcroft & Sons, to carry 4 tons of cotton, originally carried from Manchester, to Cromford Wharf from Langley Mill, 29 April 1836.

2866
PERMIT *John P. B. Des.* CROMFORD CANAL. on board *G. W. Hous.* Boat, No. *1836*
to navigate the under-mentioned GOODS:

SPECIES.	Where loaded.	Where landed	Weight by Bill of Lading.	Dry Inches.	Tonnage Weight.	Miles.	Rate per Ton.	AMOUNT.		
								L.	s.	D.
<i>Cotton</i>	<i>Manchester</i>	<i>Cromford</i>	<i>4</i>		<i>4</i>	<i>15 3/4</i>	<i>-</i>	<i>11</i>	<i>0</i>	

NEDIAS Exhibition in Chesterfield Library

Please note that Chesterfield Library has kindly offered exhibition space for NEDIAS to display current activities and projects in the foyer of the library for the month of April 2007. This gives us some time in which to plan our exhibits, with the aim to gather additional members, and to show the wealth of fascinating industrial history and archaeology in our area. If you have ideas and thoughts to help us to take full advantage of this opportunity, do please let David Wilmot or Cliff Lea know.

FIRST MEETING of the AUTUMN SEASON
Monday 11 September 2006

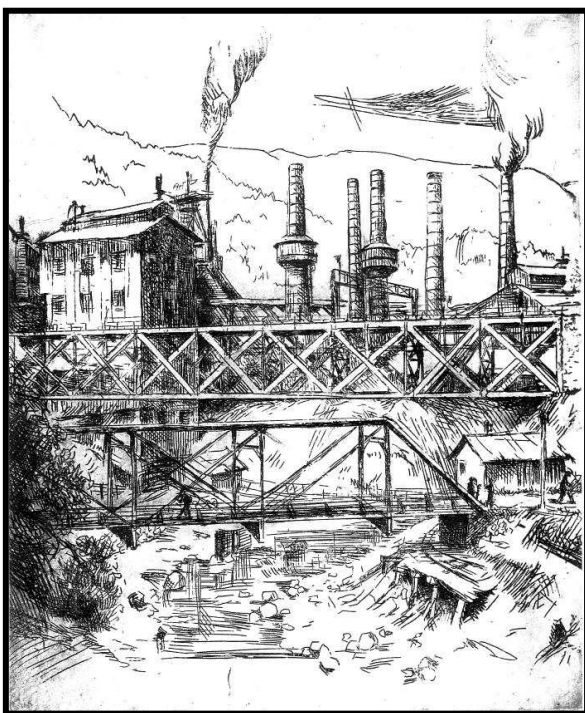
The Sheffield and South Yorkshire Navigation
By Mike Taylor

And Finally,

.....Castings Around, Slovenia style

Cliff Lea

This year Christine and I spent a fortnight in the Julian Alps in Slovenia, walking and climbing in the peaks not far from the borders with Austria and Italy.



Travelling from Ljubljana Airport to our hotel in the delightful village of Kranjska Gora, we passed through the old industrial iron and steel city of Jesenice. As in Sheffield, the many tens of thousands who used to work in the steelworks are now reduced to a mere handful.

This drawing, by artist Jaka Torkar and dating from the 1950s, helps to illustrate some vestige of previous activity.

For steel making, iron ore and limestone came directly from strata in the surrounding mountains. And very unusually the dolomitic limestone in the area was also peppered in a few places with manganese “nodules”, a rare occurrence, but a boon for making harder steels that require this special element.

Whilst walking in the area around Triglav, the highest mountain in Slovenia, we were lucky enough to find some of these rare examples. The black manganese nodules were typically

three inches in diameter, dispersed in the very light grey limestone, and looking every bit like raisins in a cake.

When we arrived at Kranjska Gora what did we see but a further reminder of the steel city that we had passed by....

.... with cast manhole covers in the road proudly showing steel workers in action.

Which reminds me that a few copies of the “Castings Around” booklet are still available.



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NEDIAS Committee: - *Chairman* – David Wilmot; *Secretary* – Patricia Pick; *Treasurer* – Pamela Alton; *Membership Secretary/Assistant Treasurer* – Jean Heathcote; *Publicity & Newsletter* – Cliff Lea; *Lecture Meetings* – David Rance; *Visits Co-ordinator* – Brian Dick; *Archivist* – Pete Wilson; *Committee Members* – Derek Grindell; David Hart.

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