

**C**aif Canolfan Gasgliadau Amgeuddfeydd ac Orielau Cenedlaethol Cymru ym Mharc Nantgarw, ar safle Glofa Nantgarw, un o'r glofeydd enwocaf yn ne Cymru, rhyw wyth neu naw milltir i'r gogledd o Gaerdydd ar yr A470. Yr unig olion o'r lofa sy'n weddill bellach yw dau byramid concrit bychan sy'n nodi lleoliad y siaffiau.

Roedd Glofa Nantgarw yn un o'r glofeydd pwysicaf yn adain dde orllewinol y Bwrdd Glo Cenedlaethol (NCB). Hon oedd yr agosaf at Gaerdydd ac roedd yn arwydd amlwg i deithwyr eu bod wedi cyrraedd maes glo de Cymru. Agorwyd y lofa ym 1911 gan y 'Taylor's Navigation Steam Coal Company'; roedd ganddi ddwy siafft a fesurai bedair troedfedd ar bymtheg ar eu traws. Gyda dyfnder o 856 llath, y pwll yma oedd y dyfnaf yn ne Cymru. Ond er bod y lofa yn ymddangos yn fodel o ddiwydiant glo effeithiol a glan, mewn gwirionedd roedd yn dioddef oherwydd y lefelau staffio isel, perthynas wael rhwng y meistri a'r gweithwyr ac yn bennaf oil oherwydd ei lleoliad ar ddaearog diarhebol o anodd y Brigiad Deheuol. Yr amgylchiadau daearegol anodd a gyfrannodd at gau'r lofa ym 1927, dair blynedd wedi ei phrynu gan y 'Taff Rhondda Navigation Steam Coal Company'. Yn yr un flwyddyn, prynwyd y lofa gan gwmni 'Powell Duffryn Limited' ond gorweddi yn segur y bu hi wedyn am gyfnod hir.

Daeth cynllun i'r fei ym 1937 i ad-drefnu'r lofa, ond gohiriwyd hwn pan ddechreuodd y rhyfel ym 1939. Yn ddiweddarach, ar 8 Ebrill 1946, rhoddodd y Gweinidog ar gyfer Tanwydd ac Ynni set ei fendith ar gynllun i ail agor y pwll, a phan ddaeth holl lofeydd Prydain dan oruchwyliaeth yr NCB ym mis Ionawr 1947, cynllun Nantgarw oedd y gwaith mawr cyntaf i adain dde orllewin yr NCB ymgymeryd ag ef.

Er mwyn adeiladu patrwm o lofa yn Nantgarw, chwalwyd holl olion y gwaith a fu yno ynghynt. Cynlluniwyd adeiladau newydd ar gyfer yr wyneb, ac ynddynt yr enghreifftiau diweddaraf o faddonau pen pwll, bwyty ac ardal cymorth cyntaf. Y bwriad oedd i'kr fod o dan do o'r adeg y gadawai'r baddon hyd nes y cyrhaeddi'r siafft. Roedd teclynnau modern i leihau mwg a nwyon i fod i gael eu gosod ger y ffyrnau cols ac roedd pob gwastraff i gael ei gadw o dan y ddaear er mwyn dileu'r angen i gael pentyrarau hyll ar yr wyneb. Cymerwyd gofal mawr i leihau'r llwch a gynhyrchwyd tanddaear ac ar yr wyneb, er mwyn lleihau'r

**The** National Museums & Galleries of Wales Collections is located at Parc Nantgarw, on the site of the Nantgarw Colliery, one of the most famous collieries in south Wales, some eight or nine miles due north of Cardiff on the A470. All that now remains of the pit are two small concrete pyramids marking the sites of the shafts.

Nantgarw Colliery was one of the flagships of the National Coal Board (NCB)'s south western division, being the nearest deep mine to Cardiff and a prominent reminder to travellers that they had entered the south Wales coalfield. Opened in 1911 by the Taylor's Navigation Steam Coal Company, it boasted two nineteen-foot-diameter shafts by 1915, and, at a depth of 856 yards, was the deepest mine in south Wales. However, despite appearing the epitome of a clean and efficient modern coal industry, the colliery suffered from undermanning, poor industrial relations and, above all, was located on the notoriously difficult geology of the South Crop. It was these adverse geological conditions that contributed to its abandonment in 1927, three years after being purchased by the Taff Rhondda Navigation Steam Coal Company. In the same year the colliery was acquired by Powell Duffryn Limited, only to be mothballed.

A scheme to reorganise the mine was designed in 1937, but this was suspended on the outbreak of war in 1939. A later project to reopen the colliery was approved by the Ministry of Fuel and Power on 8 April 1946, and when all British pits were vested in the NCB in January 1947, the Nantgarw scheme became the first major operation undertaken by the south western division of the new NCB.

In order to construct a model colliery at Nantgarw, all traces of the original were demolished and new surface buildings designed containing state-of-the-art pit-head baths, canteen and first-aid area, with the collier undercover from the time he left the baths until he descended the shaft. Modern appliances to reduce smoke and fumes were to be installed at the coke ovens, and all refuse stowed underground to eliminate the need for unsightly spoil heaps. Great care was taken to minimise any dust produced both underground and on the surface, in order to eradicate the workmen's chances of contracting pneumoconiosis.



Nantgarw ym 1974  
*Nantgarw in 1974*

perygl i'r gweithwyr o ddal pneumoconiosis.

Roedd y gweithwyr tanddaear i fod i gyrraedd ei mannau gwaith trwy gludiant locomotif, a chynlluniwyd holl ran tanddaearol y pwll er mwyn lleihau peryglon damweiniau. Roedd y talcenni glo a'r hedins caled i fod yn llwyr fecanyddol gyda chcludiant tanddaearol locomotif ar hyd graddiant rhywydd a gwaelodion y pwll ac roedd cludyddion glo yn gweithio'n awtomatig. Yn anffodus, nid yw adroddiadau mewnol yr NCB o'r cyfnod yn ategu tinc brwdfrydig y datganiadau i'r wasg. Yn hytrach, maent yn disgrifio nifer o anhawsterau, gan gynnwys y broblem o ricriwtio'r bron i 2,000 o weithwyr yr oedd yn rhaid wrthynt er mwyn cynnal y pwll.

Yn ystod y l 1940au gwelwyd lleihad sylweddol yn y nifer o ddynion a oedd yn barod i ystyried gyrfa fel glowyr, hyd yn oed yn y prif ganolfannau glo fel y Rhondda. Roedd gan lofa Nantgarw broblem benodol o safbwynt cynnal gweithlu, oherwydd roedd wedi ei lleoli o fewn cymuned lle'r oedd y boblogaeth un ai'n cyflenwi Ystad Fasnach Trefforest, y drws nesaf i'r lofa, neu yn teithio i Gaerdydd. Roedd rhaid ricriwtio'r gweithlu felly o blith newydd-ddyfodiadau neu o lofeydd eraill a oedd wedi cau y to hwnt i'r ardal. Er bod y gwaith ar y rhan danddaearol wedi cadw at yr amserlen – ar wahan i'r Lefel 280 llathen lle'r oedd y gwaith yn llusgo – roedd y gwaith ad-drefnu ar yr wyneb dri mis ar ei hOl hi, yn gyffredinol, a chymaint a thri mis ar ddeg yn achos yr olchfa.

Erbyn 12 Mawrth 1954, roedd cyfanswm cost y project wedi codi i £5.25 miliwn, gan ysgogi sylwadau brathog gan gyfarwyddwr cyffredinol cynhyrchu yr NCB:

*Dyfeisiwyd Cynllun Nantgarw er mwyn tynnu ar gronfeydd pwysig o lo golosg ar Frigiad Deheuol maes glo de Cymru... Mae'r rhan yma o'r maes glo wedi gweld Homer o siomedigaethau a methiannau a bu'n feddrod i yrfa mwy nag un peiriannydd mwyn-gloddio.*

Amlygwyd anhawsterau daearyddol mewn adroddiad arall:

*Iae'r graddiant yn fwy serth nag y disgwyliwyd... Rhaid ofni y bydd y graddiant annisgwyl hwn, sy'n fwy na'r hyn a ystyrir yn dderbyniol, yn effeithio'n ddifrifol ar gynhyrchiant y gweithwyr ar y talcenni glo.*

Roedd adroddiadau hefyd yn nodi bod y berthynas rhwng y cyflogwyr a'r gweithwyr yn peri gofid. Yn ystod 1958 yn unig cafwyd 65 achlysur o atal gwaith, arafu gwaith a cherdded allan yn y lofa:

*Pe na bai am safon technegol ardderchog y cynllun gwaith tanddaearol, byddai ymweliad o dan y ddaear yn creu'r argraff bod y lofa bron a chwythu ei phlwg bod felly wedi ei hesgeuluso. Mae safonau gwaith yn isel, ysbryd y swyddogion a'r gweithwyr yn ddigalon, disgyblaeth yn wael; mae diffyg balchder amlwg yn y lofa a does yma nemor ddim arweiniad, esiampl nac ysgogiad oddi uchod.*

Yn dilyn achos lle cerddodd saith glOwr allan o'r lofa ar 4 Fehefin 1958, gyda cholled naw deg tunnell o lo, penderfynodd yr NCB osod esiampl i'r dynion eraill gan erlyn y saith am dorri cytundebau. Yn y Llys Sirol ym Mhontypridd ar 2 Fehefin 1959, o flaen Ustus Rowe Harding, cafwyd y saith yn euog o dorri cytundebau a chafodd pob un ddirwy o £37.16s.4d, gyda chostau o £1,034 yn erbyn cyfrinfa'r undeb.

Er i Nantgarw orosi'r cyfnod mawr o gau pyllau yn y 1960au, unodd a Glofa Windsor (ychydig filltiroedd i'r gogledd, ger Abertridwr) ym mis Mawrth 1975, a chanolbwyntia'r gwaith cynhyrchu wedyn ar ben mwy proffidiol y busnes yn Windsor. Erbyn 1979 roedd glofa gyfun Nantgarw/Windsor ynghyd a'i golchfa yn cyflogi tua 650 o ddynion ac yn cynhyrchu dros 4,000 tunnell o lo bob wythnos, a'r mwyafrif yn cael ei ddefnyddio i gynhyrchu

Underground workers were to reach their workplaces by locomotive haulage, and the entire underground was designed to minimise the risk of accidents. The coal faces and hard headings were to be fully mechanised with underground transport by locomotive along easy gradients and pit bottoms and coal transport conveyors automatically operated. Unfortunately, internal NCB reports of the period do not reflect the upbeat press releases, envisaging a number of difficulties, including the recruitment of almost 2,000 employees deemed necessary to work the colliery.

During the 1940s there was a marked decline in the number of men willing to consider a coal mining career, and this even in the traditional mining strongholds such as the Rhondda. The Nantgarw Colliery posed a specific manpower problem, being situated in a community where the working population either served the Treforest Trading Estate adjacent to the colliery, or travelled to Cardiff. The workforce, therefore, had to be recruited from new entrants or from closed collieries outside the area. Although the underground work was up to schedule, apart from the 280-yard Horizon which was well behind, surface reorganisation was three months behind generally and thirteen months in the case of the washery.

By 12 March 1954 the total cost of the project had increased to £5.25 million, provoking scathing remarks by the NCB's director-general of production:

*The Nantgarw Scheme was designed to exploit important reserves of coking coal on the South Crop of the south Wales coalfield... This part of the coalfield has been the scene of many disappointments and failures and the grave of the reputation of more than one mining engineer.*

Another report highlighted the geographical difficulties:

*...the gradients are steeper than expected... It is to be feared that this unexpectedly great inclination is just past a critical limit where the productivity of face workers is seriously affected.*

Reports also pinpointed labour relations as a cause for concern. During 1958 alone there were sixty-five stoppages, go-slows and walk-outs in the colliery:

*Were it not for the technical excellence of the underground layout a visit underground leaves one with the impression that the colliery is nearing exhaustion and has therefore been neglected. Standards of work are poor; morale of both officials and workmen is at a low ebb; discipline is of a very poor order; there is a noticeable lack of pride in the colliery and leadership; example and drive from above is lacking.*

Following the walk-out of seven colliers on 4 June 1958, with the loss of ninety tons of coal, the NCB decided to make examples of the men by taking breach of contract proceedings against them. At Pontypridd County Court on 2 June 1959, before Judge Rowe Harding, all were found guilty of breach of contract and each fined £37.16s.4d., with £1,034 in costs levied against the union lodge.

Although Nantgarw survived the mass pit closures of the 1960s it merged with Windsor Colliery (a few miles to the north, near Abertridwr) on 30 March 1975, and production subsequently concentrated on the more profitable Windsor end. By 1979 the combined Nantgarw/Windsor Colliery and its washery was employing around 650 men and producing over 4,000 tons of coal per week, most of which was used in the manufacture of coke for steelworks. A man-riding train carried the Nantgarw miners three-quarters of a mile into the Windsor workings and coal output was conveyed to the Nantgarw end, where the washery prepared it for the coking coal market. During 1979-80 the combined collieries made a profit of just over £0.5 million, and despite development difficulties, the pit's future looked reasonably secure.

golosg i'r gweithfeydd dur. Roedd tren yn cludo glowyr Nantgarw dri chwarter milltir i waith Windsor a chluddwyd y glo i Nantgarw, lle byddai'r olchfa yn ei baratoi ar gyfer y farchnad glo golosg. Yn ystod 1979-80 gwnaeth y ddwy lofa gyda'i gilydd elw o ychydig mwy na £0.5 miliwn, ac ar waethaf anhawsterau, edrychai'r dyfodol yn weddol ddiogel.

Ond erbyn dechrau'r 1980au roedd y lofa eto'n wynebu problemau oherwydd diffyg gweithwyr ac amgylchiadau daearegol anodd. Yn ystod y flwyddyn ariannol 1980-1, collodd y lofa £7 miliwn ac wedi i'r gwaith daro ffawt, ym mis Rhagfyr 1982, wrth iddo ddatblygu tua'r gorllewin, tybiwyd nad oedd yr un o'r pump talcen glo posib arall yn cynnig amodau gwaith a fyddai'n rhoi canlyniadau gwerth chweil. O ganlyniad i'r gwaharddiad ar weithio gor-amser, a gyflwynwyd ar hyd a lled y DU yn ystod hydref 1983, daeth y streic 12 mis i rym, o 1984-5, ac o fewn deunaw mis o ddiwedd y streic gwelodd ardal de Cymru gyfnod arall o gau pyllau glo. Y tro hwn roedd Nantgarw yn eu plith.

Mae olwyn weindio wrth fynediad Parc Nantgarw heddiw yn gofeb i Lofa Nantgarw.

Ceri Thompson, *Ceidwad (Glo)*, Adran Ddiwydiant  
Amgueddfeydd ac Oriolau Cenedlaethol Cymru

## Bioamrywiaeth, Cynaliadwyedd ac Amgueddfeydd

Wrth agor cwpwrdd yn yr ystafell astudio trychfilod caf fy nharo'n syth bin gan nifer ac amrywiaeth y creaduriaid bach, cyn dechrau hel meddyliau ynglyn â lle y cafwyd hyd iddynt a pham eu bod mor amrywiol. Wrth i mi fwrw golwg dros gasgliad o'r fath, mae'r meddwl yn crwydro gwledydd a chefnforeodd i'r lleoliadau dirifedi yr ymwelodd y casglwyr a nhw er mwyn ychwanegu at y drysorfa hon. Ceisiaf ddychmygu'r coedwigoedd, y llynnoedd a'r glannau, and yn amlach na pheidio mae'r wybodaeth fod nifer o leoedd wedi newid y tu hwnt i bob adnabyddiaeth yn tarfu arna'i is mae'r goedwig honno bellach yn stad o dai; cafodd y pwll hwnnw ei ddraenio; ac mae'r foryd honno yn argae. Ategir y stori gan y casgliad cregyn lle gallaf gydio mewn malwod trofannol a misglod dyCir croyw Americanaidd gan wybod na ellir cael hyd iddynt mwyach; maent wedi darfod amdanynt.

Dengys y meddyliau hyn werth anadnewyddadwy casgliadau amgueddfeydd fel cofnodion o ddosbarthiad planhigion ac anifeiliaid, ac amrywiaeth y bywyd sydd ar y blaned. Dywed pob un o'r 3.9 miliwn o sbesimenau biolegol yn Amgueddfeydd ac Oriolau Cenedlaethol Cymru (AOCC) rywbeth wrthym am y byd rydym yn byw ynddo. Yn anad unrhyw beth arall, dengys casgliad amrywiaeth enfawr bywyd ac nid oes y fath beth â dwy organeb sydd yn union yr un fath a'i gilydd. Am ganrifoedd, roedd yr amrywiaeth hwn yn amherthnasol i bawb ac eithrio'r casglwyr a'r sawl a enwai rywogaethau. Fodd bynnag, mae datblygiad gwyddor ecoleg wedi sicrhau bod gennym well dealltwriaeth o gydberthynas rhywogaethau. Rydym yn ddibynnol ar yr amrywiaeth hwn am ffynonellau bywyd, meddyginiaethau, a deunyddiau genetig a diwydiannol. Gall diffyg cydbwysedd arwain at gollodion catastroffig ac o hyn y deilliodd yr angen, a dderbynir bellach, am ddatblygiad cynaliadwy.

Cafodd bioamrywiaeth a chynaliadwyedd eu cydnabod yn wleidyddol yn Uwchgynhadledd y Ddaear, yn Rio ym 1992, a bellach cawsant eu hymgorffori yn strategaethau nifer o lywodraethau. Yn y Deyrnas Unedig rhoddwyd Cynllun Gweithredu Bioamrywiaeth y DU (CGBDU) ar waith er sicrhau gweithgaredd cenedlaethol a lleol a fyddai'n cynnal ac yn hyrwyddo bioamrywiaeth. Yn lleol, gofynnir i bob awdurdod unedol lunio cynllun gweithredu bioamrywiaeth lleol (CGBLI). Yn yr un modd, mabwysiodd y DU nifer o

However, by the early 1980s the colliery's fortunes were again depressed by a lack of manpower and poor geological conditions. During the 1980-81 financial year the colliery lost £7 million, and when the main development to the west struck a fault in December 1982, none of the other five potential coal faces was felt to have working conditions sufficient to give good results. The overtime ban implemented across the UK in autumn 1983 led directly to the twelve-month strike of 1984-85, and within eighteen months of the strike ending the south Wales area was again hit by mass pit closures, Nantgarw Colliery included.

Nantgarw Colliery is commemorated by a winding wheel at the entrance to Parc Nantgarw.

Ceri Thompson, Curator (Coal), Department of Industry,  
National Museums & Galleries of Wales

## Biodiversity, Sustainability and Museums

On opening a cabinet in the insect study room I am immediately struck by the number and variety of the little animals, and then by thoughts of where they were found and why they are so variable. Looking through such a collection, my mind wanders over countries and oceans to the myriad locations the collectors visited to add to this treasure house. I try to visualise the woodlands, lakes and shores, but all too often am interrupted by the knowledge that many places have altered beyond recognition: that wood is now a housing estate, that pond has been drained, that estuary has been dammed. This story is amplified in the shell collection, where I can hold tropical snails and American freshwater mussels while knowing that they cannot be found again; they are extinct.

These thoughts illustrate the irreplaceable value of museum collections as records of the distributions of plants and animals and the variety of life on this planet. Each of the 3.9 million biological specimens in NMGW, tells us something of the world we live in. A major observation is that it demonstrates the enormous variety of life and that no two organisms are exactly alike. For centuries this variety was irrelevant to all except the collectors and namers of species. However, the development of the science of ecology has brought us to a greater understanding of the interrelationships of species. We are reliant on this variety for sources of food, medicines, and genetic and manufacturing materials. Imbalance can lead to catastrophic losses and from this has come the now accepted need for sustainable development.

Biodiversity and sustainability achieved political recognition at the 1992 Rio Earth Summit and have now been integrated into many governments' strategies. In the United Kingdom, the UK Biodiversity Action Plan (UKBAP) was initiated to require both national and local action towards the maintenance and enhancement of biodiversity. At the local level each unitary authority is charged with formulating a local biodiversity action plan (LBAP). Similarly, with sustainability the UK adopted many of the Agenda 21 recommendations, which also operate at the local level through local Agenda 21 strategies.

As a storehouse of biodiversity, and with the expertise of Museum staff, we are in an excellent position to contribute to both the biodiversity and sustainability strategies (Table 1). Much of the remit of the amalgamation of the departments of Botany and Zoology into the Department of Biodiversity and Systematic Biology (BioSyB) was to enable efficient contributions to both agendas (Tables 2 & 3), but neither is