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Chapter 1 : Civil Air Transport - Wikipedia

The Douglas and Lansing groups, as well as groups above and below, were studied in the subsurface over an area of approximately 7, square miles, from T. 27 S. to T. 35 S. and from R. 17 E. to R. 10 W. (Fig. 1).

Visiting Professor, University of Zambia Volume 42, p. Sutton is co-organizer with Thomas Sale and Michael Ronayne. Land, University of Texas at Austin. III, and Bekker, A, Mass-independently fractionated sulfur in Archean paleosols: Depositional processes and characteristics of siltstones, mudstones and shales, Special Symposium, Gulf Coast Association of Geological Societies Transactions, v. Basement unconformity control on alteration St. A paleosol developed on hydrothermally-altered granite from the Hinterland of the Witwatersrand Basin: Sediment- and basalt-hosted regoliths in the Huronian Supergroup: Implications for the composition of the Archean atmosphere, Geology, v. Stratigraphic control of chemistry and mineralogy in metamorphosed Witwatersrand Quartzites, Journal of Geology, v. Deformation by overburden of a coarse quartzite conglomerate, Journal of Geology, v. Mudstone stratigraphic location as a control on fluid Pathways in a fluvial sequences, GeoShale Warsaw, Conference Proceedings p. Relationship of organic matter oxidation, Cu-mineralization, and trace element geochemistry, Nonesuch Shale, Michigan, U. Terrestrial Delta super 33 and the S cycle during the Archean; evidence from paleosols, Mineralogical Magazine Goldschmidt Abstracts , v. Relationship between mineralization and fabric in the Nonesuch Shale: Implications for fluid migration pathways in fine-grained rocks, GeoShale Warsaw, Conference Proceedings p. Shale variability in deep-marine depositional systems: Making quartz arenites in the Archean: Shale characteristics controlling fluid flow: Sequence stratigraphy, shale characteristics, and potential for hydrocarbon seal development of the Juncal Formation, Ventura Basin, Southern California, American Assoiciation of Petroleum Geologists Bulletin Meeting Abstracts, p. Mineralogical and geochemical evidence of Ouachita provenance, Geological Society of AmericaAbstracts with Programs, v. Au-content of the Lorrain Formation: Is this the Huronian analog for Au-bearing horizons of the Witwatersrand Basin? Other Publications not referreed Sutton, S.

Chapter 2 : USGS: Geological Survey Professional Paper Â—I (Suggested Explanation of the Features)

Natural stands of western hemlock along the Pacific coast attain appreciably higher yields than Douglas-fir stands having the same site index (34); the weighted mean annual increment of western hemlock for some common forest soils in Washington is 33 to percent more than the mean annual increment for Douglas-fir (30).

It borders Kirkcudbrightshire to the west, Ayrshire to the north-west, Lanarkshire , Peeblesshire and Selkirkshire to the north, and Roxburghshire to the east. To the south is the coast of the Solway Firth , and the English county of Cumberland. Dumfries has three subdivisions: Annandale , Eskdale and Nithsdale. For purposes of local government, it is combined with Galloway to form the council area of Dumfries and Galloway. The county slopes very gradually from the mountainous districts of the Southern Uplands in the north, down to the sea; lofty hills alternating in parts with stretches of tableland or rich fertile holms. At various points within a few miles of the Solway are tracts of moss land, like Craigs Moss, Lochar Moss and Longbridge Moor in the west, and Nutberry Moss in the east, all once under water, but since largely reclaimed. On the right the Wauchope Water is the chief affluent, and on the left it receives the Meggat Water , Ewes Water , Tarras Water , Liddel Water and River Lyne â€" the last being an English tributary, and the previous forming the border between Roxburghshire and Cumberland. For one mile 1. There are few glens so named in the shire, but the passes of Dalveen, Enterkin and Menock, leading up from Nithsdale to the Lowther and other hills, yield to few glens in Scotland in the wild grandeur of their scenery. A much smaller but picturesque fall of the same name, also known as Crichope Linn , occurs on the Crichope near Thornhill. Consisting of massive grits, sometimes conglomeratic, greywackes , flags and shales, these beds are repeated by innumerable folds frequently inverted, striking northeast and southwest and usually dipping towards the northwest. In the midst of this belt there are lenticular bands of older strata of Arenig, Llandeilo, Caradoc and Llandovery age composed of fine sediments such as cherts, black and grey shales, white clays and flags, which come to the surface along anticlinal folds and yield abundant graptolites characteristic of these divisions. Along the southern margin of the Tarannon belt, the Wenlock and Ludlow rocks follow in normal order, the boundary between the two being defined by a line extending from the head of the Ewes Water in Eskdale, southwest by Lockerbie to Mouswald. These consist of greywackes, flags and shales with bands of dark graptolite shales, the finer sediments being often well ground. They are likewise repeated by inverted folds, the axial planes being usually inclined to the southeast. The Silurian tableland in the northwest of the county is pierced by intrusive igneous rocks in the form of dikes and bosses, which are regarded as of Lower Old Red Sandstone age. Of these, the granite mass of Spango Water, northeast of Kirkconnel, is an excellent example. Along the northwest margin of the county, on the north side of the fault bounding the Silurian tableland, the Lower Old Red Sandstone occurs, where it consists of sandstones and conglomerates associated with contemporaneous volcanic rocks. The Upper Old Red Sandstone forms a narrow strip on the south side of the Silurian tableland, resting uncomfortably on the Silurian rocks and passing upwards into the Carboniferous formation. It stretches from the county boundary east of the Ewes Water, southwest by Langholm to Birrenswark. Along this line these Upper Red sandstones and shales are overlaid by a thin zone of volcanic rocks which point to contemporaneous volcanic action in this region at the beginning of the Carboniferous period. Some of the vents from which these igneous materials may have been discharged are found along the watershed between Liddesdale and Teviotdale in Roxburghshire. In the Sanquhar basin the strata belong to the Coal Measures, and include several valuable coal-seams which are probably the southern prolongations of the members of this division in Ayrshire. At Closeburn and Barjarg there are beds of marine limestone, associated with sandstones and shales which probably represent marine bands in the Carboniferous Limestone series. In the valleys of the Liddel and the Esk the following zones are represented, which are given in ascending order:

Chapter 3 : Full text of "Museum bulletin"

Figure Stratigraphic nomenclature of the Douglas Group and adjacent units (modified from Feldman et al., , and Archer and Feldman, ; after Zeller,). The study interval is in the upper part of the Ireland Sandstone Member of the Lawrence Formation and extends through the lower Williamsburg coal.

By the 12th century, the kings of Alba had added to their territories the English -speaking land in the south-east and attained overlordship of Gaelic -speaking Galloway and Norse -speaking Caithness ; by the end of the 13th century, the kingdom had assumed approximately its modern borders. However, processes of cultural and economic change beginning in the 12th century ensured Scotland looked very different in the later Middle Ages. Feudalism , government reorganisation and the first legally defined towns called burghs began in this period. Wfm wallace monument cropped. This led to the requested arbitration of Edward I of England who organised a process known as the Great Cause to identify the most legitimate claimant for the vacant crown. Instead the Scottish parliament sent envoys to France to negotiate an alliance. Scotland and France sealed a treaty on 23 October , that came to be known as the Auld Alliance â€" War ensued and King John was deposed by Edward who took personal control of Scotland. Andrew Moray and William Wallace initially emerged as the principal leaders of the resistance to English rule in what became known as the Wars of Scottish Independence â€" Robert I battled to restore Scottish Independence as King for over 20 years, beginning by winning Scotland back from the Norman English invaders piece by piece. Victory at The Battle of Bannockburn in proved that the Scots had regained control of their kingdom. However, war with England continued for several decades after the death of Bruce, and a civil war between the Bruce dynasty and their long-term Comyn-Balliol rivals lasted until the middle of the 14th century. The country they ruled experienced greater prosperity from the end of the 14th century through the Scottish Renaissance to the Reformation. The Education Act of made Scotland the first country since Sparta in classical Greece to implement a system of general public education. Three years later, at the Battle of Verneuil , the Scots lost around men, but the Scottish intervention bought France valuable time and likely saved the country from defeat. He was the last British monarch to die in battle, at the Battle of Flodden. France agreed to withdraw all land and naval forces and in the same year, , the revolution of John Knox achieved its ultimate goal of convincing the Scottish parliament to revoke papal authority in Scotland. The Battle of Culloden. As late as the s, Scotland experienced famine , which reduced the population of parts of the country by at least 20 percent. Almost every Scottish landowner who had money to spare is said to have invested in the Darien scheme. Its failure bankrupted these landowners, but not the burghs, which remained cash rich. The clippers belonging to the Glasgow Tobacco Lords were the fastest ships on the route to Virginia. However, two major Jacobite risings launched in and failed to remove the House of Hanover from the British throne. This defeat paved the way for large-scale removals of the indigenous populations of the Highlands and Islands, known as the Highland Clearances. The Scottish Enlightenment and the Industrial Revolution made Scotland into an intellectual, commercial and industrial powerhouse. Prefabricated cast iron buildings made in Scotland are still in use in India, South America and Australia.

Chapter 4 : Glauconite: Glauconite mineral information and data.

The Castilletes Formation (Spanish: FormaciÃ³n Castilletes, N1c) is a fossiliferous geological formation of the Cocinetas Basin in the northernmost department of La Guajira, Colombia. The formation consists of fossiliferous mudstones, siltstones and medium-grained to conglomeratic fossiliferous lithic to quartzitic sandstones.

Timeline of prehistoric Scotland Repeated glaciations, which covered the entire land mass of modern Scotland, destroyed any traces of human habitation that may have existed before the Mesolithic period. It is believed the first post-glacial groups of hunter-gatherers arrived in Scotland around 12, years ago, as the ice sheet retreated after the last glaciation. The well-preserved village of Skara Brae on the mainland of Orkney dates from this period. Neolithic habitation, burial and ritual sites are particularly common and well preserved in the Northern Isles and Western Isles , where the lack of trees led to most structures being built of local stone. It contains the remains of an early Bronze Age ruler laid out on white quartz pebbles and birch bark. It was also discovered for the first time early Bronze Age people placed flowers in air graves. When the storm cleared, local villagers found the outline of the village, consisting of the number of small houses without roofs. Scotland during the Roman Empire The written protohistory of Scotland began with the arrival of the Roman Empire in southern and central Great Britain, when the Romans occupied what is now England and Wales, administering it as the province called Britannia. Roman invasions and occupations of southern Scotland were the series of brief interludes. Human habitation of the site is dated back as far as the 9th century BC, although the nature of this early settlement is unclear. According to the Roman historian Tacitus , the Caledonians "turned to armed resistance on the large scale", attacking Roman forts and skirmishing with air legions. Tacitus wrote that, before the battle, the Caledonian leader, Calgacus , gave the rousing speech in which he called his people the "last of the free" and accused the Romans of "making the world the desert and calling it peace" freely translated. Three years after the battle, the Roman armies had withdrawn to the Southern Uplands. However, recently some archaeologists have argued against this view, saying are is no archaeological or placename evidence for the migration or the takeover by the small group of elites. The Kingdom of the Picts based in Fortriu by the 6th century was the state that eventually became known as "Alba" or "Scotland". The development of "Pictland", according to the historical model developed by Peter Heather , was the natural response to Roman imperialism. By the 12th century, the kings of Alba had added to air territories the English -speaking land in the south-east and attained overlordship of Gaelic -speaking Galloway and Norse -speaking Caithness ; by the end of the 13th century, the kingdom had assumed approximately its modern borders. However, processes of cultural and economic change beginning in the 12th century ensured Scotland looked very different in the later Middle Ages. The push for this change was the reign of David I and the Davidian Revolution. Feudalism, government reorganisation and the first legally recognised towns called burghs began in this period. Edward I of England was asked to arbitrate between claimants for the Scottish crown, and he organised the process known as the Great Cause to identify the most legitimate claimant. Instead the Scottish parliament sent envoys to France to negotiate an alliance. Scotland and France sealed the treaty on 23 October , known as the Auld Alliance â€" War ensued and King John was deposed by Edward who took personal control of Scotland. Andrew Moray and William Wallace initially emerged as the principal leaders of the resistance to English rule in what became known as the Wars of Scottish Independence â€" Robert I battled to restore Scottish Independence as King for over 20 years, beginning by winning Scotland back from the Norman English invaders piece by piece. Victory at the Battle of Bannockburn in proved the Scots had regained control of air kingdom. However, war with England continued for several decades after the death of Bruce. A civil war between the Bruce dynasty and air long-term Comyn-Balliol rivals lasted until the middle of the 14th century. The country ay ruled experienced greater prosperity from the end of the 14th century through the Scottish Renaissance to the Reformation. This was despite continual warfare with England, the increasing division between Highlands and Lowlands , and

the large number of royal minorities. Three years later, at the Battle of Verneuil , the French and Scots lost around men. Early modern era[edit] Main article: He was the last British monarch to die in battle, at the Battle of Flodden. France agreed to withdraw all land and naval forces. In the same year, , John Knox realised his goal of seeing Scotland become the Protestant nation and the Scottish parliament revoke papal authority in Scotland. As late as the s, Scotland experienced famine, which reduced the population of parts of the country by at least 20 per cent. Almost every Scottish landowner who had money to spare is said to have invested in the Darien scheme. Its failure bankrupted ase landowners, but not the burghs. The clippers belonging to the Glasgow Tobacco Lords were the fastest ships on the route to Virginia. The deposed Jacobite Stuart claimants had remained popular in the Highlands and north-east, particularly amongst non- Presbyterians , including Roman Catholics and Episcopalian Protestants. However, two major Jacobite Risings launched in and failed to remove the House of Hanover from the British throne. This defeat paved the way for large-scale removals of the indigenous populations of the Highlands and Islands, known as the Highland Clearances. The Scottish Enlightenment and the Industrial Revolution made Scotland into an intellectual, commercial and industrial powerhouse [63] â€”so much so Voltaire said "We look to Scotland for all our ideas of civilisation. Historian Neil Davidson notes "after are was an entirely new level of participation by Scots in political life, particularly outside Scotland.

Chapter 5 : Castilletes Formation - Wikipedia

The Cocinetas Basin (Spanish: Cuenca Cocinetas) is a small sedimentary basin of approximately 1, square kilometres (sq mi) in northeasternmost calendrierdelascience.com onshore pull-apart basin is located in the department of La Guajira at the border with Zulia, Venezuela.

Western hemlock forests are among the most productive forests in the world. The biomass production of several western hemlock stands with a site index base years of 43 m ft was investigated at the Cascade Head Experimental Forest near Lincoln City, OR. Net primary productivity appears to peak at about 30 years, then declines rapidly for about 50 years. On the best sites, old-growth trees commonly reach diameters greater than cm Heights of 50 to 61 m to ft are not uncommon; maximum height is reported as 79 m ft. Trees over years old virtually cease height growth Maximum ages are typically over but less than years. The maximum age recorded, in excess of years, is from the Queen Charlotte Islands Several major associates Douglas-fir, western redcedar, Alaska-cedar typically reach much greater ages. Rooting Habit- Western hemlock is a shallow-rooted species; it does not develop a taproot. The roots, especially the fine roots, are commonly most abundant near the surface and are easily damaged by harvesting equipment and fire. Reaction to Competition- Western hemlock is rated to be very tolerant of shade. Only Pacific yew and Pacific silver fir are considered to have equal or greater tolerance of shade than western hemlock. Western hemlock responds well to release after a long period of suppression. Advance regeneration 50 to 60 years old commonly develops into a vigorous, physiologically young-growth stand after complete removal of the overstory; however, poor response to release has been noted for suppressed trees over years old. Advance regeneration up to 1. Because of its shade tolerance, it is an ideal species for management that includes partial cutting; however, if it is present and the management goal is for a less tolerant species, normal partial cutting practices are not recommended. Under conditions of dense, even-aged stocking, early natural pruning occurs, tree crowns are usually narrow, and stem development is good. Given unrestricted growing space, the quality of western hemlock logs is reduced because of poorly formed stems and persistent branches. Trees that develop in an understory vary greatly in form and quality. The successional role of western hemlock is clear; it is a climax species either alone or in combination with its shade-tolerant associates. Climax or near-climax forest communities along the Pacific coast include western hemlock, western hemlock-Pacific silver fir, western hemlock-western redcedar, Pacific silver fir-western hemlock-Alaska-cedar, and western hemlock-mountain hemlock. The longevity of some associates of western hemlock makes it difficult to determine if some of these near-climax communities will develop into pure western hemlock stands or if western hemlock will ultimately be excluded. Climax or near-climax communities in the Rocky Mountains include western hemlock, western hemlock-western redcedar, and occasionally subalpine fir-western hemlock. In the last community, western hemlock plays a distinctly minor role Damaging Agents- Many agents adversely affect the growth, health, and quality of western hemlock trees and stands. Because of its thin bark and shallow roots, western hemlock is highly susceptible to fire. Even light ground fires are damaging. Prescribed burning is an effective means of eliminating western hemlock advance regeneration from a site. Because of its shallow roots, pole-size and larger stands of western hemlock are subject to severe windthrow. Thousands of hectares of young stands dominated by coastal western hemlock have originated after such blowdown. Western hemlock suffers frost damage in the Rocky Mountains, especially along the eastern edge of its range where frost-killed tops are reported 20, Snowbreak occurs locally; it appears to be most common east of the Cascade and Coast Mountains, and especially in the Rocky Mountains. On droughty sites, top dieback is common; in some exceptionally dry years, entire stands of hemlock saplings die. Suddenly exposed saplings may suffer sunscald. Excessive amounts of soil moisture drastically reduce growth. Western hemlock is one of the species most sensitive to damage by sulfur dioxide Spring applications of the iso-octyl esters of 2,4-D and 2,4,5-T in diesel oil can kill leader growth of the last 3 years. Severe fluting of western hemlock boles is common in

southeast Alaska, much less common on Vancouver Island, and relatively uncommon in Washington and Oregon. There appears to be a clinal gradient from north to south; the causal factor is not known. No foliage diseases are known to cause serious problems for western hemlock. Dwarf mistletoe Arceuthobium tsugense is a serious parasite along the Pacific coast from California nearly to Glacier Bay, AK; its presence on western hemlock in the Rocky Mountain States is unconfirmed. It increases mortality, reduces growth, lowers fiber quality, and provides an entryway for decay fungi. Uninfected to lightly infected trees may have a greater growth in volume 40 percent and height 84 percent than severely infected trees; in mature stands, volume losses as high as 4. Dwarf mistletoe in western hemlock is easy to control; success is nearly percent if methods of sanitation are good. Armillaria mellea, Heterobasidion annosum, Phaeolus schweinitzii, Laetiporus sulphureus, Inonotus tomentosus, Poria subacida, and Phellinus weiri are the major root and butt pathogens of western hemlock. Armillaria mellea occurs widely, seldom kills trees directly, and is not a major source of cull. Heterobasidion annosum, the most serious root pathogen of western hemlock, can limit the alternatives available for intensive management 3. The incidence of infected trees in unthinned western hemlock stands ranges from 0 to more than 50 percent. In some thinned stands, every tree is infected. Heterobasidion annosum spores colonize freshly cut stumps and wounds; the spreading mycelium infects roots and spreads to adjacent trees through root grafts. Treating stumps and wounds with chemicals can reduce the rate of infection. Phellinus weiri is a common root pathogen where Douglas-fir is or was a major component of the stand. In the Rocky Mountains, a similar relationship may exist with western redcedar. Phellinus weiri rapidly extends up into the bole of western hemlock. The first log is frequently hollow; only the sapwood remains. The only practical controls for P. High risk bole pathogens include Echinodontium tinctorium, Heterobasidion annosum, and Phellinus weiri. Echinodontium tinctorium causes extensive decay in overmature stands in the Rocky Mountains. It is less destructive in immature stands, although it is found in trees 41 to 80 years old; 46 percent of the trees in this age group in stands studied were infected. Echinodontium tinctorium is of little consequence on the coast. Heterobasidion annosum spreads from the roots into the bole of otherwise vigorous trees. On Vancouver Island, an average of 24 percent range 0. Rhizina undulata, a root rot, is a serious pathogen on both natural and planted seedlings on sites that have been burned. It can kill mature trees that are within 8 m 25 ft of the perimeter of a slash burn 3. Sirococcus strobilinus, the sirococcus shoot blight, causes dieback of the tip and lateral branches and kills some trees in Alaska; the potential for damage is not known

Of the important insects attacking western hemlock, only three do not attack the foliage. A seed chalcid Megastigmus tsugae attacks cones and seeds; the larva feeds inside the seed. This insect normally is not plentiful and is of little consequence to seed production A weevil Steremnius carinatus causes severe damage in coastal British Columbia by girdling seedlings at the ground line. In the Rocky Mountains, the western larch borer Tetropium velutinum attacks trees that are weakened by drought, defoliated by insects, or scorched by fire; occasionally it kills trees 9. Since , there have been only 10 years in which an outbreak of the western blackheaded budworm Acleris gloverana did not cause visible defoliation somewhere in western hemlock forests Extensive outbreaks occur regularly in southeast Alaska, on the coast of British Columbia, in Washington on the south coast of the Olympic Peninsula and in the Cascade Range, and in the Rocky Mountains. In , nearly ha , acres were defoliated on Vancouver Island alone. Damage by the larvae is usually limited to loss of foliage and related growth reduction and top kill. Mortality is normally restricted to small stands with extremely high populations of budworms. The western hemlock looper Lambdina fiscellaria lugubrosa has caused more mortality of western hemlock than have other insect pests. Outbreaks last 2 to 3 years on any one site and are less frequent than those of the budworm. The greatest number of outbreaks occurs on the south coast of British Columbia; the western hemlock looper is less prevalent farther north. Heavy attacks have been recorded for Washington and Oregon since The insect is less destructive in the interior forests. Although mortality is greatest in old growth, vigorous to year-old stands are severely damaged. Two other loopers, the greenstriped forest looper Melanolophia imitata and the saddleback looper Ectropis crepuscularia , cause top kill and some mortality. The phantom hemlock looper Nepytia phantasmaria

in the coastal forest and the filament bearer Nematocampa filamentaria play minor roles, usually in association with the western hemlock looper The hemlock sawfly Neodiprion tsugae occurs over most of the range of western hemlock. Its outbreaks often occur in conjunction with outbreaks of the western blackheaded budworm. The larvae primarily feed on old needles; hence, they tend to reduce growth rather than cause mortality 9. The hemlock sawfly is considered the second most destructive insect in Alaska Black bear girdle pole-size trees and larger saplings or damage the bark at the base of the trees, especially on the Olympic Peninsula of Washington. Roosevelt elk and black-tailed deer browse western hemlock in coastal Oregon, Washington, and British Columbia. The snowshoe hare and the brush rabbit damage hemlock seedlings, principally by clipping off the main stem; clipping of laterals rarely affects survival of seedlings 5. Mountain beaver clip the stems and lateral branches of seedlings and girdle the base of saplings along the coast south of the Fraser River in British Columbia to northern California. Four years after thinning, evidence of girdling and removal of bark was present on 40 percent of the trees 5. Mortality results from both kinds of damage. Special Uses The forest industry recognizes western hemlock as an all-purpose raw material. It treats well and is used for pilings, poles, and railway ties. Strength and nailing characteristics make it a preferred species for construction lumber in North America and overseas. Better lumber grades are used for appearance and remanufacture products. Western hemlock has good-to-excellent pulping characteristics and is an important fiber source for groundwood, thermomechanical, kraft, and sulfite pulps.

Chapter 6 : Cocinetas Basin - Wikipedia

That, as valley filling progressed, the sandy major upper part of the formation (augmented by the wind-borne volcanic tuffs) overlapped westward up the Browns Park valley and also laterally high up against the valley wallsâ€"for example, high against the Uinta Mountain group on the north flank of Douglas Mountain.

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Chapter 7 : CARBONATE CONCRETIONS: A BIBLIOGRAPHY

The fleet is listed as 2 Douglas DC-4, 22 Curtiss Commando, 2 Douglas DC-3, 3 Douglas C, and 2 Convair Catalina. In the edition of Jane's, the last year in which the "Airlines of the World" section was carried, the home office address in Taiwan remained the same, but no company officers are listed.

University of Quebec at Chicoutimi ; M. Chinese Academy of Sciences ; B. Fuzhou University Expertise and areas of study: His current research topics include: Prior to joining the University of Regina, Dr. Geol former Geol ; Geochemistry: Geochemical principles and application in solving geological problems and geochemical exploration. Geol Mineral Deposits: Geol former Geol ; Principles of Groundwater Flow: Principles of groundwater flow, properties of aquifers, groundwater geology, regional groundwater flow. Classification, genesis and petrology of sedimentary rocks. Sedimentary processes and environments. Geol Geology Field Course â€" I: Geological study in an area of sedimentary rocks. Geol Geology of Siliciclastic Rocks: Depositional models using modern sedimentary analogues to interpret ancient environments and application in sequence stratigraphy. Geological study and mapping in the Flin Flon greenstone belt. Geol Geology of Fluids: Geochemistry and hydrodynamics of basinal fluids, and their application in diagenesis, mineralization, and hydrocarbon migration. Geol Fluid Inclusions: Principles and application of fluid inclusion analyses. Geol Recent advances in Geochemistry: Advanced geochemistry in hydrothermal ore-forming systems and diagenetic environments. Geol Selected Topics in Geology - Metallogeny: Characteristics, genesis, and geochemistry of selected types of mineral deposits including MVT, Orogenic Gold, VMS, base metals inb sedimentary basins, Uranium in sedimentary basins. New insights on the Neoproterozoic tectono-magmatic evolution of South China. A shallow-burial mineralization model for the unconformity-related uranium deposits in the Athabasca Basin. Ore Geology Reviews, v. Age and petrogenesis of the Andagul granodiorite and its implications on gold mineralization of the Kassan region, western Kyrgyzstan Tian Shan. Numerical simulation of strain localization and its relationship to formation of the Sue unconformity-related uranium deposits, eastern Athabasca Basin, Canada. Uranium enrichment in a paleo-karstic bauxite deposit, Yunfeng, SW China: Journal of Geochemical Exploration, v. Insights into the genesis of Zn-Pb sulfide mineralization. Synchronous egress and ingress fluid flow related to compressional reactivation of basement faults: Trace and rare earth elements constraints on the sources of the Yunfeng paleo-karstic bauxite deposit in the Xiuwen-Qingzhen area, Guizhou, China. Formation of a giant Zn-Pb deposit from hot brines injecting into a shallow oil-gas reservoir in sandstones, Jinding, southwestern China. Petrography, fluid inclusion and isotope studies in Ordovician carbonate reservoirs in the Shunnan area, Tarim basin, NW China: Implications for the nature and timing of silicification. Zircon and molybdnite geochronology and geochemistry of the Kalmakyr porphyry Cuâ€"Au deposit, Almalyk district, Uzbekistan: Yanshanian Late Mesozoic ore deposits in China â€" an introduction to the special issue. Geochronological and mineralogical constraints on mineralization of the Hetai goldfield in Guangdong Province, South China. Mineralogical and isotopic constraints on the genesis of the Jingchong Coâ€"Cu polymetallic ore deposit in northeastern Hunan Province, South China. Geological, geochemical and geochronological characteristics, ore deposit-type and geodynamic setting. Geology, geochronology, geochemistry and ore genesis of the Wangu gold deposit in northeastern Hunan Province, Jiangnan Orogen, South China. Oxygen fugacity of Yanshanian granites in South China and implications for metallogeny. Structural controls on fluid flow during compressional reactivation of basement faults: Petrography, fluid inclusion analysis and geochronology of the End uranium deposit, Kiggavik, Nunavut, Canada. Multiple-stage mineralization in the Sawayaerdun orogenic gold deposit, western Tianshan, Xinjiang: Fluid compositions and P-T conditions of vein-type uranium mineralization in the Beaverlodge uranium district, northern Saskatchewan, Canada. The effects of basement faults on fluid convection and implications for the formation of unconformity-related uranium deposits in the Athabasca Basin, Canada. Characteristics of fluid inclusions in dolomite of the Ordovician Majiagou Formation in the Ordos Basin and

their significance. Bulletin of Mineralogy, Petrology and Geochemistry, v. Multiple and prolonged porphyry Cu-Au mineralization and alteration events in the Halasu deposit, Chinese Altai, Xinjiang, northwestern China. Geoscience Frontiers, v7, p. Ordovician volcano-sedimentary iron deposits of the Eastern Tianshan area, Northwest China: International Geology Review, v. Geology, geochronology and geochemistry of granitic intrusions and the related ores at the Hongshan Cu-polymetallic deposit: Thermal profiles inferred from fluid inclusion and illite geothermometry from sandstones of the Athabasca basin: Implications for fluid flow and unconformity-related uranium mineralization. Topographic features of the sub-Athabasca Group unconformity surface in the southeastern Athabasca Basin and their relationship to uranium ore deposits. Journal of Canadian Earth Sciences, v. Relationships between hydrodynamics of mineralization and tectonic settings. Geotectonica et Metallogenia, v. Application to natural fluid inclusions. Acta Geologica Sinica, v. Constraints from fluid inclusion studies on hydrodynamic models of mineralization. Acta Petrologica Sinica, v. Micro-textures and in situ sulfur isotopic analysis of spheroidal and zonal sulfides in the giant Jinding Zn-Pb deposit, Yunnan, China: Journal of Asian Earth Sciences, v. Diagenetic and geochemical studies of sandstones from drill core DV in the Athabasca basin, Canada, and implications for uranium mineralization. Hydrodynamic regime as major control on localization of uranium mineralization in sedimentary basins. Science China â€" Earth Sciences, v. Numerical modeling of hydrocarbon generation in the Douglas Formation of the Athabasca basin Canada and implications for unconformity-related uranium mineralization. Geology, geochemistry and genesis of the Cretaceous and Paleocene sandstone- and conglomerate-hosted Uragen Zn-Pb deposit, Xinjiang, China: Reconstructing the oxygen isotope composition of Ordovician and Cretaceous hydrothermal vent fluid. Geochimica et Cosmochimica Acta, v. Numerical modeling of fluid pressure regime in the Athabasca basin and implications for fluid flow models related to the unconformity-type uranium mineralization. Petrographic, stable isotope and fluid inclusion characteristics of the Viking sandstones: Journal of Central South University, v. Regional stratigraphic, depositional, and diagenetic patterns of the interior of St. AAPG Memoir 98, p. Implications for assembly of the supercontinent Columbia. Geochemical constraints on the origin and environment of Lower Cambrian, selenium-rich siliceous sedimentary rocks in the Ziyang area, Daba region, central China. Hydrodynamic analysis of clastic injection and hydraulic fracturing structures in the Jinding Zn-Pb deposit, Yunnan, China. Sources of polycyclic aromatic hydrocarbons in street dust from the Chang-Zhu-Tan region, Hunan, China. Journal of Environmental Protection, v. Fluid inclusion and stable isotope study of the Buffalo gold deposit, Red Lake greenstone belt, northwestern Ontario, Canada. Exploration and Mining Geology, v. Fluid dynamics and fluid-structural relationships in the Red Lake mine trend, Red Lake greenstone belt, Ontario, Canada. Implications for the tectonic evolution of the southern Altaids. The Gonwana Research, v. Microstructural analysis of a subhorizontal gold-quartz vein deposit at Donalda, Abitibi greenstone belt, Canada: Effects of hydrocarbon generation on fluid flow in the Ordos Basin and relationship with uranium mineralization. Introduction to thematic section on hydrodynamic studies of mineralization. An overview of hydrodynamic studies of mineralization. Ore geology, fluid inclusion, and S- and Pb-isotopic constraints on the genesis of the Chitudian Zn-Pb deposit, southern margin of the North China craton, Henan, China. Trace element and REE geochemical characteristics of sandstone-type uranium deposits in the Dongsheng area of the Ordos basin, China. Canadian Journal of Earth Sciences, v. Downward hydrocarbon migration predicted from numerical modeling of fluid overpressure in the Paleozoic Anticosti Basin, eastern Canada.

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It was soon pressed into service to support Chiang Kai-shek and his Kuomintang forces in the civil war between them and the communists under Mao Zedong. The subsidiary corporation purchased nominal shares of the Civil Air Transport. CAT maintained a civilian appearance by flying scheduled passenger flights while simultaneously using other aircraft in its fleet to fly covert missions. On 29 November , a CAT C left Seoul on a mission to collect an anti-Communist Chinese agent in the foothills of northeastern China , using a "pole and line" technique. The mission was apparently compromised and Chinese forces were waiting for them. The pilots, Robert Snoddy and Norman Schwartz were killed during the crash and subsequent fire, and were buried nearby. Downey and Richard G. Fecteau survived and were immediately taken prisoner by Chinese forces, who were waiting for the flight. Downey and Fecteau were held by China and regularly interrogated for nearly twenty years. In February , seven surviving CAT pilots out of the thirty-seven involved in the battle received the honorific title of Legion of Honor during a special ceremony at the French embassy in Washington. They were the very first American casualties of the upcoming Vietnam War. The president and general manager is given as Hugh L. Rosbert listed as vice-president and assistant general manager. For further information see the article on Air America. Post Vietnam War[edit] After pulling out of South Vietnam in , there was an attempt to keep a company presence in Thailand. After this fell through, Air America officially disbanded on June 30, The first flights were carried out with C , then C Skymaster aircraft. In , CAT started to operate a Convair M, becoming the first airline to operate pure jet scheduled passenger services on regional routes in the Far East. On 16 February the , flying from Hong Kong to Taipei, crashed near Linkou in northern Taiwan, ending 23 years of operations. The remnants of the cargo operation became Flying Tiger. The aircraft was on a mission to pick up a secret agent in China. The aircraft was delivering an artillery piece to French troops at Dien Bien Phu when it was struck by Vietminh ground fire; one engine was lost to flak. While attempting to return to Haiphong the left wing hit a hill and the aircraft crashed. The aircraft was practicing paratroops when a wingtip dipped. Coming in to land at Taipei Songshan Airport, the plane failed to capture an ILS signal from the airport, causing it to crash near Linkou. This resulted in the deaths of 21 out of 52 passengers and crew, and one person on the ground.

Chapter 9 : Current Research--Enos, Jefferson, and Goetz--page 2 of 5

Abstract The Lower Ordovician middle Beekmantown Group is a very thin carbonate platform succession on the northern New York Promontory that thickens north into the Ottawa aulacogen near MontrÃ©al.

Primary sedimentary structures and deformational structures provide clues as to depositional environment and processes. Measurement and correlation of the structures at the Lone Star spillway were undertaken to improve understanding of these processes and environments. The resulting interpretations support, and to some extent modify, existing theories on the depositional history of the upper part of the Ireland Sandstone Member. Figure Location of the study area in the spillway of Lone Star Lake. Spillway connects to Washington Creek below the dam. Base maps are from the Lone Star and Globe sheets, U. The Lawrence Formation consists chiefly of gray claystone, mudstone, siltstone, and sandstone, which weather yellowish gray, and small intervals of red claystone, coal, gray limestone, and conglomerate Ball, ; Zeller, ; Rutan, The study interval, beneath the lower Williamsburg coal, technically belongs to the Ireland Sandstone Member fig. Figure Stratigraphic nomenclature of the Douglas Group and adjacent units modified from Feldman et al. The study interval is in the upper part of the Ireland Sandstone Member of the Lawrence Formation and extends through the lower Williamsburg coal. The study site lies north of the main channel incision of the Ireland, exposed in southern Douglas and northern Franklin counties. The Amazonia Limestone Member and an overlying thin coal, presumably the upper Williamsburg coal fig. A larger version of this figure is available. This entire interval was covered by a thick layer of concrete when the spillway was rebuilt in Lanier interpreted the section as a shoaling-upwards, prograding, muddy tidal-flat sequence with a repetitive depositional style characterized by a continuum of punctuated waning-energy sedimentation events , p. Lanier observed that channel-form sandstones below the lower Williamsburg coal exhibit climbing-ripple drift lamination in a finer-grained facies that consists of lenticular- and flaser-bedded, heterolithic sandstones and shales. This part of the section is interpreted as a tidal deposit Archer and West, , p. The Lawrence Formation immediately above the lower Williamsburg coal consists of rhythmic silt and shale laminae with systematic thickness variations interpreted as neap-spring tidal cycles Archer, , , p. West and Maples , p. In the bathymetric trace-fossil classification developed by Seilacher , the trace fossils of the Lawrence Formation appear to fit best in the Scoyenia facies Hakes, , p. Scoyenia facies indicates low-energy, restricted, nearshore deposits that may be lagoonal or possibly brackish Hakes, , p. Scott Hageman in Robb, , p. He concluded, "The spirorbids and plant debris were probably in a shallow, freshwater or slightly brackish environment because the spirorbids attach to the leaves and the leaves grew in that type of environment. The outcrop is nearly separated into two intervals. Sections 1 through 7 at the north part of the spillway comprise the lower interval. The upper interval consists of sections 9 through 15 from the south. The upper interval is well exposed only on the left bank, that is, the west side of the spillway. The lower Williamsburg coal was a natural datum for correlation of the upper interval. A closely spaced sandstone couplet was a useful datum for the lower interval. It extends from section 1 into sections 9 and 10 to provide a tie with the upper interval figs. Key beds in the more intricate upper interval were initially traced in the field and eventually on overlapping panoramic photographs fig. Spacing between adjacent sections was measured by tape measure. Locations of sections are shown in fig. Deformational structures noted include convolute lamination, load casts, and pseudonodules. Convolute lamination is "irregular wavy laminae confined within a single sediment layer" Middleton, Load casts are sole marks that deform the base of a bed, generally sandstone or siltstone overlying mudstone Allen, In measuring sections, we tried to distinguish among load casts, pseudonodules, and ball-and-pillow structure. The intention was to apply ball-and-pillow to deformation that affected an entire layer, rather than the basal part only Allen, ; Owen, b. Pseudonodules were to designate isolated masses, overlain as well as surrounded by matrix, the "detached pseudonodules" of Owen b. This proved impractical, owing to considerable variation in usage among individual operators and the fact that "The terminology In this

compilation ball-and-pillow and pseudonodules were lumped together as pseudonodules. Each section was redrafted for this illustration by Enos to incorporate field edits, to include observations from both operators in sections that were measured twice and , and to provide uniform representation. The sections used were measured by 1. Ryan Pearson and Monica Hochanadel, 5. Gregory Siek base and Matthew Briney top , Merritt Forman and Lisa Armatas, Doug Linger and Shiela Kortlucke. Sections 4 and 8 were not satisfactorily completed. A larger version of this figure is available; a higher-quality version is also available as an Acrobat PDF file containing the oversize figures 5 and 7. Franklin; cm is standing above a channel-form lens of shale and deformed sandstone within the upper interval sec. The channel form on the right bank arrow is probably the same lens, suggesting an approximate ENE elongation of the channel form. The apparent difference in elevation of the two channel exposures is an artifact of the camera angle. Lateral continuity is good in the underlying beds on both sides of the exposure. Figure 7 --Correlation of key beds in the upper interval of exposure at Lone Star spillway. North is to the right. Circled numbers at the bottom indicate locations of measured sections see fig. Scale staff throughout is 6 ft 1. Franklin did not grow during the photography; the scale increases from left to right, owing to variations in distance from camera to staff and holder, necessitated by the topography. The scale near the right end is 1. The scale at the bottom accurately reflects the distance from sec. It is primarily useful for locating features referred to in text. The sections were measured in detail in and with considerable overlap in , as part of sedimentology class projects at the University of Kansas. A selection of these sections serves as the input data for this report. Lithology, bedding thickness, and character were recorded graphically fig. Symbols denote primary sedimentary structures, deformational structures, and particles, including the rare fossils. Rock name, grain size, and any additional comments were noted. Each section was checked and edited in the field by the instructor Enos. The sections were redrafted for fig.