Defining Colluvium and Alluvium: An Experiment to Discuss and Consolidate Perspectives
Bradley A. Miller\textsuperscript{1} and Jérôme Juilleret\textsuperscript{2}

Despite being fundamental terms in Earth science, the definitions for colluvium and alluvium differ between disciplines, countries, and authors. Although the differences and overlaps of the various definitions cause many issues, the most important problem is that they hinder scientific communication and can result in misunderstandings. This poster first calls attention to the diversity of published definitions, then asks the viewer to contribute their point of view for differentiating these two deposit materials. The results of the survey will bring us one step closer to understanding where consensus may be found.

Selected Examples of Colluvium Definitions

- Unconsolidated material at the bottom of a cliff or slope, generally moved by gravity alone. It lacks stratification and is usually unsorted: its composition depends upon its rock source, and its fragments range greatly in size. Such deposits include debris and talus. (Lapidus, 1990)
- Loose, non-stratified, poorly sorted, heterogeneous mixture of various size grades found on the lower part and base of slopes. It is generated by three modes of transport: (1) overland flow occurs when the saturation capacity of the soil is exceeded during high rainfall; (2) soil movements involving splash creep as a result of rainsplash impact on frost creep; and (3) downslope displacement of soil as a direct result of ploughing (Kwaad and Mucher, 1979; Imeson et al., 1980). (French, 1992)
- Colluvium is poorly sorted debris that has accumulated at the base of slopes, in depressions, or along small streams through gravity, soil creep, and local wash. It consists largely of material that has rolled, slid or fallen down the slope under the influence of gravity. Accumulations of rock fragments are called talus. The rock fragments in colluvium are usually angular, in contrast to the rounded, water-worn cobbles and stones in alluvium and glacial outwash. (USA Soil Survey Staff, 1993)
- Detritus, transported by various processes, that is still adjacent to or on its source hillslope. (Pederson, 2000)
- Heterogeneous materials of any particle size, generally composed of soil and/or rock fragments, accumulated on the lower parts of slopes, transported there by gravity, soil creep, sheet flow, rainwash, mudflows or solifluction. (Eggleton, 2001)
- Natural hillslope deposit resulting from the gradual accumulation over short distances of upslope soil materials, saprolite or rock. Colluvium is deposited on the slopes perpendicular to the flow of rivers. They are frequently depleted in clay. (Larousse Agricole, 2002)
- Sediments deposited due to anthropogenic induced soil erosion, caused by settling, clearing, mining, grazing, and/or farming. (Leopold, 2003)
- Any transported geologic material, poorly sorted, accumulated on a slope, mainly on a concave one, or at the base of a slope, in depressions or along small streams. Accumulation is the result of gravitational action or other transporting agents, such as frost action, soil creep, or local wash. The material consists of loose, incoherent rock fragments and soil material. Soils derived from such materials often have overthickened surface horizons and/or buried horizons. According to some authors, talus and cliff debris are included in such deposits. (Canarache, et al., 2006)
- Deposit of rock fragments and soil material accumulated at the base of steep slopes as a result of gravitational action. (Brady and Weil, 2008)
- (from Latin: co-, with, and alluvium). Footslope deposit. Relatively thin and made of elements which have undergone low transportation compared to alluvium. (Foucault et al, 2014)

Selected Examples of Alluvium Definitions

- Alluvium or Alluvion (from Latin, "an inundation") is a term which in the English language, has no very definite meaning. Some authors use it to designate all rocks which have been formed by causes now acting on the surface of the earth, including those of volcanic origin; while others, adhering to the literal meaning of the original term, confine its application to deposits, whatever be their character, that have resulted from inundation… The term has been badly selected, but is used in its proper application to designate all those deposits recently formed, or now forming, by the agency of water, whether from an interrupted and constant stream, or from casual inundation. (Cuthbert, 1842)
- The sedimentary deposits resulting from the actions of rivers, thus including those laid down in river channels, floodplains, estuaries, lakes, and fans at the foot of mountain slopes. There is some dispute over the exact definition of the term alluvium: in a historical sense it includes all unconsolidated fragmental material from the coarsest gravels and sands down to the finest clay and silt-sized particles; in a more restricted view only the finer silts are regarded as alluvium. (Whittow, 1984)
- The general term for detrital made by rivers or streams or found on alluvial fans, flood plains, etc. Alluvium consists of gravel, sand, silt, and clay and often contains organic matter that makes it a fertile soil. It does not include the subaqueous sediments of lakes and seas. (Lapidus, 1990)
- Materials deposited on the land surface from transport by flowing water confined to a channel or valley floor (Eggleton, 2001)
- Sediment deposits (mud, sand, gravel, pebbles) brought by the waters. Alluvium lies in a valley and from a transport over long distances of various materials, often rounded, located upstream of the location studied. Therefore, the nature of its constituent materials can be very different from that of the surrounding soil. (Larousse Agricole, 2002)
- Alluvium deposited by unconcentrated surface runoff or sheet erosion, usually at the base of a slope (Neuendorf, 2005)
- A detrital unconsolidated rock, of any particle-size, including materials originating from soils and parent rocks, and deposited by running water. It is normally characteristic of present-day floodplains, but also of older terraces, deltas, alluvial cones or fans. Fertile soils usually develop from medium- or fine-textured alluvia. (Canarache, et al., 2006)
- Sediments deposited by running water of streams and rivers. It may occur on terraces well above present streams, on the present flood plains or deltas, or as a fan at the base of a slope. (Soil Science Society of America, 2008)
- (from Latin: alluvio, overflow). Sediments of rivers and lakes composed, according to the regions crossed and the strength of the current, of pebbles, gravels, sand, silt and clay and usually found in lenticular (channel) deposits. (Foucault et al, 2014)

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