as usual knocks at the door and demands admittance. VIKRAJI opens the door and assisted by the power of the *tâwid* conquers the demon, insisting on his quitting *Ujain* never to return. *Ujain* was thus relieved from a dire calamity. VI'RJI reigned in *Ujain* for many years and became a great monarch. His reign forms an epoch from which throughout *Gujrat* and *Hindostan*, the Hindu year is dated; thus the present A. D. 1837 is 1893 of *Vira* (*Vikrama ?*): he is recognized as the founder of the numerous castés which now exist; before his time there were only the four principal ones of *Brahmin*, *Kshatria*, *Waisya*, and *Sudra*.

III.—*Catalogue of Geological Specimens from Kemaon presented to the Asiatic Society. By Dr.* J. McCLELLAND.

Anxious that the structure of *Kemaon* should be brought as practically as possible to the notice of those who devote themselves to geology, I take the liberty to present to the Asiatic Society a duplicate collection of rock specimens, the counterpart of which is intended to be sent to the Geological Society of London. If this small collection be of no other utility, it may serve in some slight degree to elucidate the extensive collection of the rocks of the same province, formed by the late Captain HERBERT, and may assist some member of the Society in the task of arranging the vast accumulation of materials alluded to.

They are the specimens from which the mineral characters of the rocks of *Kemaon* were partly taken, so that if my work contains errors in the application of names, or if the substances to which certain names have therein been applied, be erroneously described; the members of the Society and all persons who have access to their museum will have it in their power to rectify my mistakes, which I have no doubt are numerous. On going hastily over the reinspection of the collection after nine months subsequent experience in Assam and the Cossiah mountains, I have myself been enabled in the catalogue to make some corrections applicable to my "Inquiries in *Kemaon*;" but there are other errors no doubt of still greater moment which neither my time nor my abilities enable me at present to point out; these may more readily occur to any member of the Society who will undertake an examination of this collection.

No. 1. Granite (Inq. Kem. 44*) as I have stated this rock to be stratified it becomes a matter of consequence to determine whether it be granite or not. I confess I begin myself to suspect it to be gneiss which has assumed the granitic form in particular spots. The whole range composed of this rock (changing in places into unquestionable gneiss) dips towards the *Himálaya*, presenting for the most part steep declivities in an opposite direction formed by the outgoing of the strata. In the lower strata the mica gives place to hornblende, forming an intermediate rock between gneiss and hornblende-slate as 5, 8, and 20†.

2. Specimen, of the granitic centres contained in the gneiss of Kalee Kemaon‡.

3. Gneiss of Kalee Kemaon.

4. Harder nodules which adhere to the surface of granitic masses.

5. Gneiss, with quartz and felspar imbedded in mica and hornblende, from Kalee Kemaon; it underlies the granitic rocks at Choura Pany, forming the southern foot of that mountain. This specimen belongs to variety *a*, Inq. Kem. 59.

6. Nodules of red felspar and hornblende adhering to the granitic centres of gneiss at Kalee Kemaon.

7. Mica-slate from beds of gneiss at Choura Pany.

8. The same containing hornblende.

9. Ferruginous slate from beds in gneiss and extending parallel with the strata. Inq. Kem. 52.

10, 11. Two interesting specimens shewing the transition between No. 5, and clay-slate variat. Inq. Kem. 59.

12. Felspar quartz with very little mica forming veins in the gneiss of Choura Pany.

13. Gneiss of Choura Pany (on the southern declivity of the mountain) passing into mica-slate nearly the same as 7.

14. Chlorit-slate with quartz from the southern part of Choura Pany. Inq. Kem. 60.

15. Ditto without quartz,

16. Porphyritic green stone. Inq. Kem. 61.

17. Described (Inq. Kem. 62.) as oldest gypsum from beds in mica-slate 7 and 8, but I doubt its being gypsum. Von Buch found beds of quartz in mica-slate just as this rock occurs: this specimen ought to be more carefully examined.

* Inq. Kem. 44—This abbreviation denotes the page referred to for further information in a work published in Calcutta, 1835, entitled, Inquiries in Kemaon, &c.

† These and similarly expressed numbers throughout the catalogue refer to specimens in the collection.

‡ When localities are mentioned, the map attached to the Inquiries in Kemaon may be referred to.

18. Specimen of a similar appearance from a similar geognostic position. Its specific gravity approaches that of gypsum more nearly than that of the last.

19. Mica-slate with chlorite, approaching closely to the character of clay-slate. It is interposed between 5 and the oldest clay-slate (24) and occurs extensively in Kalee Kemaon.

20. Hornblende-slate from the Rameesa valley.

21. Mica-slate occurring in beds of gneiss at Choura Pany, and with beds of quartz at Durgurrah.

22. Transition between mica-slate and clay-slate, Ponar valley.

23. Quartz containing mica (Inq. Kem. 64) described in mistake as oldest gypsum. It occurs in mica-slate at Durgurrah, and forms extensive beds in that rock. The mica-slate adjoining these beds for the distance of several miles on each side contains no quartz.

24. Clay-slate, oldest variety, (1 variat. Inq. Kem. 70.)

25. Old blue clay-slate, (2 variat. Inq. Kem. 70.)

26. Newest clay-slate, (3 variat. Inq. Kem. 71.)

27. A variety of No. 25 denominated roofing-slate: it is of superior quality and answers admirably for the peculiar purpose to which it is applied.

28. Clay-slate, (4 variat. Inq. Kem. 72.)

29. Transition slate? crystalline curved slaty structure with a pearly lustre, by which last it is supposed to be distinguished from 28, the lustre of which is glimmering and depends on specks of mica which are quite absent in this variety, the lustre of which depends on crystalline structure.

30. A somewhat crystalline bed occurring in the oldest clay-slate (24) on the N. E. foot of Choura Pany near the bed of the Lohoo river. One of the specimens since it was first examined has assumed quite a cupreous lustre, from which, as well as from its weight, I suspect it to contain a certain portion of copper. A repository of that metal may probably be found in the vicinity of the place from which this specimen was extracted.

31. Quartz from contemporaneous veins in clay-slate.

32. Transition between 25 and talc. It is described, perhaps erroneously, under the name of graphite or drawing slate. (Inq. Kem. 74 and 75.) It affords some of the principal repositories of copper ore.

33. In further illustration of the transition between old blue slate and talc. In this specimen the approximation to clay-slate preponderates.

34. The same transition, but in this the substance approximates closely to serpentine. Inq. Kem. 133. Its lightness may however with propriety exclude it from that species.

35. Granular foliated limestone from beds in clay-slate, described as transition limestone. Inq. Kem. 85, 86, 87.

36. Primitive limestone. Inq. Kem. 75, structure in the great scale

lamellar in consequence of straight layers of argillaceous matter which separate the calcareous parts; these are very minutely granular. It reposes on clay-slate on the northern declivity of Takill.

37. Snow-white fine granular limestone.

38. Peach-blossom granular limestone. The granular foliated structure of both these rocks is obscure; 38 effervesces but slowly in acids, and a small portion appears to remain insoluble.

39. In this specimen both forms of the rock (38 and 37) alternate in layers.

40. Splintery hornstone from beds in 37 and 38.

41. Hornstone. Inq. Kem. 151.

42. Slate and limestone named for some reason for which I cannot now sufficiently account, aluminous slate and limestone. Inq. Kem. 87. Specimen from the Ramessa valley.

43. Another variety of the same rock from the Ponar valley.

44. Magnesian limestone containing mica and other insoluble matters.

45. Magnesian limestone.

46. Coarse magnesian limestone. The last three rocks belong to the Ponar valley. Inq. Kem. 90 to 92.

47. Steatitic sandstone, (Inq. Kem. 92,) fresh specimen.

48. Another specimen of the fresh rock.

49. The same partially weathered.

50. The same merely differing in color and rather more weathered.

51. Fully weathered and presenting the character of a fine sandstone in the state in which this peculiar rock forms the greater portion of the Suee mountain. See map.

52. The same as it often occurs in overlying masses corroded as in the specimen.

These instructive specimens from 47 to 52 merit serious attention. We see at Jeercoonie (vide map) a ridge of mountain formed of compact rock capable of scratching glass, and presenting some of the characters of Jade. We see masses of this rock continually separating and falling from the effects of the atmosphere, and that the masses thus detached from the original bed change rapidly from a compact and crystalline state to a loose fine-grained sandstone whose characters become permanent. Even the fresh specimens 47 and 48 since the time I procured them have underwent so great a change that they would now hardly be recognised by a person who saw them before. The sharp splinters have become soft and opaque, and the whole surface from an uniform sea-green and greenish yellow with waxy lustre has changed to a dull gray! To what extent have such changes taken place in nature? The Suee mountain adjoining Jeercoonie though now a huge uncomformable mass of fine sandstone without a trace of its former appearance must have originally consisted of this crystalline though apparently stratified rock! Inq. Kem. 92.

53. The same rock fresh but rapidly undergoing change.

54. Specimen of the same rock weathered and presenting the form in which it is spread over the surface of the country, as well as reposing in detached blocks and masses on the summits of clay-slate mountains*.

55. Rocks described, Inq. Kem. 106, 107, as transition limestone. It forms a ridge in the centre of Shore valley as well as most of the adjoining mountain summits. It appears to be stratified but much disturbed and broken. Brecciated specimens of the same.

57. Slaty variety.

58. Variegated brown and blue varieties of the same. The mineral characters of these limestones are sufficiently distinct from those described as primitive, and as this indication is confirmed by geognostic relations, I still adhere to the distinctions I have drawn between them, independent however of any theoretical views.

59. Overlying variety of the same. It is not very distinct in its mineral characters from the stratified rocks, and it may be supposed to have had its continuity merely separated from adjoining masses by the same set of causes as now occasion the corrosive effects on its surface. Inq. Kem. 107 and 108.

60. Compact dolomite. Inq. Kem. 109.

61. The same with chlorite and quartz preponderating.

62. With chlorite preponderating, the last two specimens being natural as well as local links between dolomite and chlorite slate at Belket.

63. Transition between compact dolomite and granular quartz with chlorite. Inq. Kem. 114.

64. Blue variety of the same consisting of distinct grains of quartz imbedded in chlorite more or less closely in different parts of the same specimen.

65. The same, but the grains of quartz are larger, more distinct and loosely aggregated as well as rounded, and altogether presenting the character of sandstone. These specimens were taken from the valley of Belket.

66. Peach-blossom variety of the same, from the Ramgunga valley at the bridge on the road between Petora and Almora, described, Inq. Kem. 115 as granular dolomite.

67. Another variety of the same, from the same situation. The oval grains of quartz appear to be in this specimen arranged so as to present their longest diameters to each other, giving the mass a fibrous structure and proving its chemical origin: attentive observation may detect the same structure in other specimens.

68. Another specimen from the same situation as the last.

69. Of the same nature as 66, 67 and 68, but in a state of decay and quite friable. In this form the rock is found in Goren valley 3,000 feet above the situation in which the other specimens were found.

* It is not always found *reposing* on clay-slate, but as is seen in many instances ascending from beneath that rock.

70. Siliceous oolite, Inq. Kem. 117, composing a lofty range of mountains, and connected by an insensible transition with the rocks just enumerated. It differs from any form of quartz rock I am acquainted with, in undergoing spontaneous decomposition.

71. The same slightly decomposed.

72. The same still more decomposed and earthy. The last 12 specimens, together with the series represented by 47 and 48, which are all connected by natural affinities, compose a large tract of the mountains of Kemaon; and my collection of specimens from the Abor mountains, several hundred miles to the eastward of Kemaon, is comprised of specimens which would seem to represent a continuation of the same rocks along the whole extent of the Himálaya in this direction. It would be interesting to compare these with the siliceous rocks of the cordilleras of the Andes, which also appear like the Kemaon siliceous rocks to be subject to rapid decay.

73. Protogine? I described this rock under the head of Granitine, Inq. in Kem. 124, and was led to believe the crystalline parts to be dolomite from the local connection which exists between this rock and limestone in all situations in which I have had an opportunity of observing it. Its connection with the ores of copper render it interesting.

74. A more characteristic specimen composed of large crystals.

75. A specimen of the same, but whose crystals are small and closely impacted together as is usual in this rock, the talc being collected in nests rather than uniformly disseminated.

76. Nearly the same as 74.

77. The same with a few columnar crystals of talc on one of its surfaces.

78. Another variety of the same found in small masses at the base of a lofty and abrupt calcareous mountain in Shore valley. The crystalline parts appear to be arragonite, but the matrix is talc.

79. Talcose limestone from Shore valley.

80. Another variety of a similar nature, but with the talcose parts decayed and extending longitudinally through the mass in an irregular concentric manner, so as to give it the appearance of a fossil wood, which similitude is further strengthened by the great length and cylindric shape of its masses, so that I was led to consider the first variety as satin spar, Inq. Kem. 125, and the other as a fossil wood, (Inq. Kem. 384;) but subsequent discoveries of both these minerals during my journey in Assam enable me to correct these errors.

81. Commonly slaty talc.

82. Another variety (spintery).

83. The form in which 81 enters into the composition of the talcose limestone.

84. The form in which talc enters into the composition of Protogine.

85. Rhomboidal crystals of talc.

86. Dolomite spar from nests between the talc and limestone in Shore valley.

87. Variegated slate. Inq. Kem. 128.

88. Newer argillaceous slate not variegated and found under distinct circumstances from the last. Inq. Kem. 130.

89. Greyish black brecciated serpentine from the bed of the Mahikali river. Inq. Kem. 131.

90. Noble serpentine. Inq. Kem. 134.

91. Ditto with veins of a quartzose appearance.

92. Coarser variety.

93. Green argillaceous slate from the vicinity of the serpentine. These rocks are found near the village of Gorajht on the way to Julaghaut from Petora.

94. Older alpine limestone copper slate. Inq. Kem. 1838. The copper ore is contained between the slaty layers and fractures of the rock.

94½. Alpine limestone. There is another variety of this rock distinguished by its flat tabular masses forming thin beds, spread over other rocks rather than accumulated in masses of great depth, such as the rock represented by this specimen. I endeavoured to distinguish this variety farther by the peculiar form of some of its distinct concretions which resemble in shape small fishes. Inq. Kem. 140.

95. Magnesian limestone from Shore valley: structure slaty but crystalline and compact. Inq. Kem. 142.

96. The same, shewing the change to which it is subject by decomposition.

97. Shews that some layers are less disposed to decompose than others, and that the destructive causes operate as well tranversely with regard to the layers as laterally.

98. The rock completely altered, (Inq. Kem. 43) named earthy variety.

99. Vesicular limestone.

100. Porphyritic septarium. Inq. Kem. 148.

101. Vesicular limestone from the summit of several mountains.

102. Other specimens of the same from similar situations but somewhat decomposed.

103. Impressions of rhomboidal crystal in a basis undetermined, collected from amongst the talcose rocks and protogine in Shore valley.

104. Bituminous marlslate, valley of Belket. Inq. Kem. 154.

105. Calcareous grit stone from the northern declivity of the mountain that divides Belket from the plains.

106. Argillaceous sandstone. Inq. Kem. 156.

107. Amianthus from the junction of the talcose slate and limestone rocks in Shore valley.

108. Common quartz crystallised.

109. Greenstone contained in the newer limestone of Shore valley.

110. Hornblende—Belket.

111. Porphyry from the bed of the river at Burmdeo pass.

112. Transition between the newer argillaceous slates and granular crystalline rocks called steatitic sandstone.

113. Snow-white siliceous oolite from the Deary mountains.

114. Granular quartz from the valley of Bara but not collected in sitû.

115. The same approaching the siliceous deposits already described in the catalogue, taken from the Deary mountains.

116. Matrix forming the contents of a vein in the primitive slate at Lohooghat. The vein is situated behind the rear guard.

117. Stalagmite from Takill.

118. Felspar from a vein in gneiss at Firker.

119. Quartz from a cotemporaneous bed of clay-slate at Lohooghat with a portion of the adjoining wall of the bed adhering to it.

120. Fragments of siliceous pebble, water-worn and subsequently fractured, found in the vein in clay-slate 116. Pebbles of this nature and boulders of small size intersected in various parts as if cut, rather than fractured, are common in this vein: the pieces of each pebble are found to lie adjacent to each other.

121. Transition between clay-slate and limestone, Shore valley.

Miscellaneous.

122. Steatitic sandstone approaching to the state of quartz, Ponar valley.

123. Felspar with a little quartz and mica from the veins in the gneiss of Choura Pany.

124. Veins and nests in protogine, Shore valley.

125. From the gravel in the bed of the river Ludhoo at Belket.

126, 127. From the same.

128. Porphyry from the bed of the river at Burmdeo Pass. Judging from the color of the precipices and the quantity of this rock found in the stream as well as of III, a porphyry of the same color, I suspect that the great central masses composing the first range of mountains next the plains, consist of these rocks, and that the grit stones, both calcareous and argillaceous, are only comparatively superficial. The calcareous grit stone is a sedimentary deposite derived from the disturbance of calcareous rocks, probably from the mountains of limestone which are 30 miles within the sub-Himálayan ranges. The argillaceous grit stone, 106, which occupies a superincumbent position, from the quantity of mica and siliceous matter it contains, may be in like manner derived from the sedimentary deposites which took place on the upheavement of the primitive range intercepting the space between this deposite and the calcareous mountains that afforded the substratum. While these rocks themselves by subsequent

catastrophes may have been elevated from beneath the level of the present plains where they were originally deposited, to their present position which varies from three to five thousand feet above the ocean. This is suggested merely as an idea, the discoveries now in progress in this quarter conducted by CAUTLEY, FALCONER, BAKER and DURAND are likely to afford some rational grounds from which conclusions may be safely derived.

129. Shewing the contorted structure of the compact limestone in particular places. The specimen adduced is from the declivity of the Mahikali valley.

130. Claystone from the Ramessa valley.

131. Brecciated limestone from Shore valley.

132. Greenstone from Shore valley.

133. A single specimen found in one of the small rivulets near Lohoo-ghat. It resembles porous lava and consists of grains of felspar imbedded in a pitch-like vesicular matrix.

134. An earthy globe found in the soil at Loheoghat: it has somewhat the appearance of a volcanic bomb.

Metallic Ores and their associates.

135. Talc and quartz of a curved slaty structure containing copper ore—Shore valley.

136. Another specimen.

137. Limestone talc and calcspar containing copper ore from the same locality.

138. Copper ore contained in a curved slaty structure of calcareous talcose and argillaceous nature. Geognostic position intermediate between clay-slate and limestone, valley of Borabice.

139. A very rich copper ore from Gungowly.

140. Another variety from the same mine.

141. Another specimen intermixed with rhomb spar.

142. Iron pyrites and rhomb spar.

143. Talc occurring with the copper ores.

144. Iron ore from the Ponar valley, repository in 5 and 20.

145. Another variety from the same situation.

146. Another species of iron ore from a repository in clay-slate near Dhee.

147. Iron mica forming the sides of the repository from which 145 was extracted.

Distinct series of Geological Specimens from the Abor or sub-Himálayan mountains in the 95° E. Long. and about 28° 15′ N. Lat. lying between the confluence of the Dihong and Dibong rivers in Upper Assam.

In the original catalogue of my Assam collection, I included 46 specimens of rocks brought to me from the Abor mountains. The

present series may not be very different as they were collected by the same persons and on the same occasion. In the almost total absence of any definite information regarding the structure of this portion of the Himálaya, it would be wrong to reject even the scanty intelligence which these specimens gathered by native collectors are calculated to afford. They were said to have been collected at an altitude of 1,500 feet on the first range of acclivities facing the valley, but this I doubt, it being more probable that the collectors contented themselves by selecting them from the beds of streams at the foot of the mountains.

No. 1. Is a claystone porphyry containing white crystals of felspar imbedded in a green earthy matrix.

2. The matrix is brown and the crystals of felspar reddish-brown, but in other respects it is the same as No. 1.

3. Small spheroids instead of angular crystals are imbedded: a similar basis to that of the two first specimens.

4. Veins of quartz penetrate the same substance. No. 4½, a variety with undulating veins of white felspar.

5. Porphyritic breccia consisting of angular fragments of the matrices of each of the former rocks: agglutinated specks of felspar also occur in it.

6. Serpentine and quartz.

7. Porphyritic breccia.

8. The same with veins of serpentine.

9.

10. Claystone of brown color.

11. Ditto greyish black.

12. Another variety.

14. Steatitic sandstone of the same nature as 47 and 48 of the Kemaon series.

15. Compact bluish-black limestone.

17. Quartzose sandstone similar to 70 of the Kemaon series.

18. Gneiss.

19. Other varieties of the same.

20. The same with hornblende.

23. Quartz with small vesicles from which felspar has been removed.

24.

25. Felspar.

26. Sandstone.

27. Quartz rock.

28. Decomposed green stone.

29. Decomposed gneiss, fine granular structure.

30. Calcareous grit stone, the same as 105, Kemaon series.

31. Coarse quartzose sandstone.

32. Magnesian limestone.

33. Serpentine and claystone forming a porphyritic structure as in 7.
34. Scoria found in the sands of the Brahmaputra.
35. Something of a similar nature but heavier.
36. A large crystal of garnet and mica received from Mr. Brugh of Sadiyah, and said to be found in the Abor mountains.
37.
38.

Although these minerals have been merely submitted to a hasty inspection, yet it requires no great care or penetration to detect by their means an interesting affinity in the nature of the rock composing the sub-Himálayan ranges at very remote points along the line of their southern base. We find the porphyries of the Abor mountains not very different from those that are found in the bed of the Gogra at Burmdeo pass, 900 miles to the westward, vide 111, and 128 in the foregoing catalogue, which constitute the central masses of the outer range of the mountains of Kemaon, merely covered except on the inaccessible precipices, by sedimentary deposits of a very recent nature.

IV.—*Facsimiles of Ancient Inscriptions, lithographed by* James Prinsep, *Sec. As. Soc. &c.*

While engaged upon the engrossing object of the lát inscription, other documents of the same nature have been accumulating so fast upon my hands, that I shall have some difficulty in bringing up the arrear, even with a sacrifice of all the collateral information which should be sought from various sources, in illustration of the ancient records I have undertaken to preserve in an accessible shape through the convenient and facile process of lithography. My apology must be that once made public, these documents will be always open to discussion, and their utility will be felt at times and in cases which it is impossible to foresee. The task of systematically arranging and applying such materials may be safely left to the profound author of the long-expected "*Corpus inscriptionum Indicarum*"—to whom I proffer the fullest permission to extract all that can forward his object of filling up the history of India from numismatical and monumental data.

Following the random order of the plates themselves, I must first notice the

Inscription on a Stone Slab, No. 1 *of the Society's museum,* 52 *lines,* of which the five first lines are given as a specimen in Plate XXXII. The stone is marked at the side as having been "presented to the