by their being swept down with the torrents of water issuing from the volcano. The lowland forms have their body encased in large scutes, either rough, scale-like, and arranged in four or five series *(Chætostomus),* or polished, forming broad rings round the slender

and depressed tail (*Loricaria,* fig. 4), or

polished and large, so as to form two

series only along the body and short tail

*(Callichthys,* fig. 5). In India this sec­

tion is but sparsely represented, chiefly in mountain- streams, by small loach-like Siluroids, in which various kinds of peculiar apparatus are developed to enable them to hold on to stones, this preventing

their being swept away by the

current ; in *Pseudecheneis* the

adhesive apparatus consists of

transverse plaits of the skin on

the thorax between the pectoral

fins; in *Ex­*

*ostoma* the

mouth is

modified in­

to a sucto­

rial organ,

probably

with the

same func­

tion. Finally, the South-American genus *Aspredo,* which is remarkable for the peculiar mode of protecting its eggs, as mentioned in vol. xii. p. 660, belongs also to this section.

VII. The small section of *Siluridæ Opisthopteræ* com­prises South-American forms, the majority of which inhabit waters at high altitudes up to 14,000 feet above the level of the sea. All have a short-rayed dorsal fin, placed above or behind the middle of the length of the body, above or behind the ventrals, which may be absent. Also the anal is short. The nostrils are remote from each other, and the gill-membranes are not confluent with the skin of the isthmus. These little fishes, of which *Trichomycterus* and *Nematogenys* are the principal genera, replace in the Andes the loaches of the northern hemi­sphere; they resemble them in appearance and habits, and even in coloration, offering a striking illustration of the fact that similar forms of animals are produced under similar external physical conditions.

VIII. Finally, the *Siluridæ Branchicolæ* comprise the smallest and least developed members of the family; they are referred to two genera only from South America, *Stegophilus* and *Vandellia,* the smallest of which does not exceed the length of 2 inches. Their body is soft, narrow, cylindrical, and elongate; the dorsal and anal fins short ; the vent far behind the middle of the length of the body ; gill-membranes confluent with the skin of the isthmus. Each maxillary is provided with a small barbel ; and the gill-covers are armed with short stiff spines. Their small size not­withstanding, these Siluroids are well known to the Brazilians, who accuse them of entering and ascending the urethra of persons while bathing, causing inflammation and sometimes death. They certainly live parasitically in the gill-cavity of large Siluroids, probably enter­ing those cavities for places of safety, but without drawing any nourishment from their

hosts. (a. c. g.)

SILVANUS, an ancient Italian god of

the woods *(silvæ),* closely allied to Faunus. Virgil speaks of him as a god of fields and cattle, and says that the Pelasgians dedicated a grove to him near Cære. Horace calls him the god of boundaries. Pigs were sacrificed to him, and at harvest festivals he received offerings of milk. He appears sometimes, especially in inscriptions, as a domestic god, and is occasionally associated with the Lares and Penates. Virgil describes him as crowned with fennel and lilies or carrying an uprooted cypress in his hand. On a relief he appears with a crown of pine branches in his hair, a pine branch in his left hand, a skin filled with fruits hanging about his neck, a pruning-knife in his right hand, and a dog by his side. On votive tablets he is offener represented as the god of planting and gardening than as the rough

woodland deity.

SILVER@@1 is widely diffused throughout the earth’s crust, including the ocean, which contains a trace of the noble metal—minute, it is true, in a relative sense, but in absolute amount approaching 10,000 million tons. Of the varieties of silver ores, the following chiefly are metallurgically important :—(1) *Reguline Silver,* generally alloyed with mercury or gold, and if with the latter including sometimes a trace of platinum ; (2) *Horn Silver,* native chloride, AgCl ; (3) *Silver Glance,* native sulphide, Ag2S ; (4) *Silver-Copper Glance,* (Ag,Cu)2S; (5) *Pyrargyrite* (“Rothgültigerz ”), Ag3SbS3 ; (6) *Stephanite,* Ag5SbS4 ; (7) *Polybasite,* 9(Ag2,Cu2)S + (Sb2,As2)S3. Silver is also frequently met with in base-metallic ores, *e.g.,* in lead ores and many kinds of pyrites. Unmixed silver minerals nowhere present themselves in large continuous masses. What we call “silver ores” are all more or less complex mixtures in which the non-argentiferous components are usually decidedly in the majority. Their metallurgic treat­ment depends chiefly on the nature of these admixtures, the state of combination of the silver being as a rule irre­levant in the choice of a process, because some at least of the noble metal is always present as sulphide, and our modes of treatment for it include all other native forms.

*Amalgamation.—*If a given ore is relatively free of base “metals” (metallurgically speaking), some process of “amalgamation” may be, and often is, resorted to.

In the *Freiberg process* the first step is to roast the (ground) ore with common salt, which converts the sulphide of silver into

@@@1 Compare Chemistry, vol. v. p. 528-530; also Mining, Mint, and Money.