to be formed; but when the young is observed from above, along both sides of the body a series of fine serrated teeth are seen to project, which can be nothing else than the *processus transversi* proceeding from the vertebræ, which exist in the old *Syngnathi*, and afford direct points of support for the said rings. I think I could count about eighteen such points between the head and anus, and at least 50 between the anus and caudal extremity. The ventral fins, which occupy the same place as in the marsupial pipe-fish, are very small, but distinct; they have an expanded somewhat rounded termination, and only rudimental rays. The motions of these organs are particularly lively. The dorsal fins may also be plainly distinguished, although their rays appear to be merely indicated; from this fin proceeds as prolongation, both forwards and backwards, a somewhat lower fin-like membrane, without the least trace of rays; the anterior continuation gradually decreases in height, and disappears about half-way between the neck and dorsal fin; the posterior prolongation continues, however, along the entire back of the tail, with the same height unto the extremity of the tail, turns round this, and then extends on the under side of the tail to the anus. The caudal fin in the young *Syngnathi* has also the same formation and shape as in the eel, and forms one of its chief natatory organs.

Such dissimilarly formed locomotive organs as we meet with in the small pipe-fish, as young and as old individuals, are explained by the different kind of locomotion which it employs at these various periods of life, and this again seems to indicate quite a distinct habit. To inquire more accurately into this point, as also to determine the period and kind of the metamorphosis, remains yet for future observations.

I take this opportunity of mentioning that the delicate young *Syngnathi* are perhaps of all things the best suited for microscopical examinations on the circulation of the blood.

LI.—*Information respecting Botanical Travellers.*

AGAIN, on June 8th, Mr. Gardner writes thus from Pernambuco*: "Ever since my return from the Rio San Francisco, I have been anxiously expecting the parcels and letters of which this day has

* In continuation of the extracts given in our last Number, p. 365.

put me in possession; and their receipt having set my mind at ease respecting the welfare of my friends, and the safety of those collections which I had sent home, I sit down to write a few lines. Since I returned hither, I have collected about a hundred species of plants almost entirely different from anything I had found before. Among them are some very noble Grasses. I have secured seeds of the fine new *Melocactus* which I mentioned in my last letter; so that if the living plants should fail, I still hope it may be reared. There are also two pods of a large leguminous tree from the banks of San Francisco among the articles which are immediately to be despatched for England; several specimens, in a living state, of an Orchideous plant that I believe to be *Monachanthus fimbriatus*, growing in a box, together with a large-flowered *Epidendrum*.

"The rains here continue very heavy; it is impossible to stir abroad without being drenched. I have been waiting some time for a vessel to convey me to Avacati, which is to sail in a few days; thence I intend to go to a place called Teó, about 200 miles inland, where I shall remain some time, and if all be well, go across the mountains into the province of Piahy. I find that it is requisite to purchase four horses at least, which, with their trappings, cost about 50*l*. A very good black servant, who has already been in my employ for five months, will accompany me.

Pernambuco, July 18th.

"After many delays, in consequence of being unable to find a vessel bound to Avacati, in the province of Ceara, I have the satisfaction to tell you that my arrangements are finally made to sail in a few hours; as, however, there has been one incessant pour of rain for the last two months, I could have done nothing in the way of collecting, which partly reconciles me to the delay in starting. From Avacati I still intend to make my way as quickly as possible to Teó, 240 miles inland, where, if I find a good field for botany, I may stay for a few months, and shall then probably pass into the province of Piahy. At all events, I do not think of returning to Pernambuco for eight or ten months, if any more; but shall not fail to seize every opportunity of letting you know how I get on. A long time may elapse ere I can again have the satisfaction of receiving news from Europe."

G. GARDNER.

In Southern Africa, our valued friend, the Honourable W. H. Harvey, is zealously devoting his leisure hours to acquiring a more perfect knowledge of the botany of that extensive and yet but partially explored country. He is printing at Cape Town an account of the genera hitherto discovered, and is giving every possible encouragement

couragement to the German botanist and collector Zeyher, to continue his researches in the more remote parts of the colony where he has already been very successful, especially in Uitenhage and Albany. It was intended that he should have proceeded to the eastward, much beyond the colony; but this is now out of the question. "Any excursion beyond the boundary," our correspondent observes, "the state of the country forbids. You will have seen by the papers, that many thousands of Dutch boors, not satisfied with our government, emigrated in the course of last year into the Zooloo country to seek 'peace and quietness,' as they said, from the mild and paternal sway of the Zooloo chief, Dingaan, who was civil enough at first, for they did not alarm him—coming, as he said, *in fews and fews*; but when the main body arrived, the savage took his measures, and succeeded in cutting off the leader of the boors, and many of his chosen men. Since that, the whole country has been disturbed, and actions have taken place between the parties with various success. The population of Port Natal is almost massacred to a man, the Missionaries and Captain Gardner have fled, and the property of white persons in that country has been carried off by Dingaan. It will take a long time to restore matters to a steady footing. The main body of the boors, though having twice lost their leaders, still hold out; and till they or Dingaan be completely crushed, Zeyher must keep within bounds. I hope to settle him this coming season among the mountain districts of George, Auteniqualand, Zivartsberg, &c.; Kuysna to be his head-quarters, where Mr. Rex, who is still living and well, will gladly afford him hospitality. It is now, however, (August) about four months too early for that country, and these cannot be better spent than in Uitenhage and Albany, where, I have no doubt, he will find out many plants that have escaped others; in fact, I have boundless confidence in the resources of novelty still in this country. He has already found a new *Myrtus* (not *Memecylon Capense*), a tree 30 feet high, which I have called *Myrtus Zeyheri*; and from his present quarters (Uitenhage), he sends me almost by every post something or other interesting, and is most ready to poke out every little oddity I call for, or to send fruit and seeds for dissection, buds for æstivation, and such like; in fact, he spares no pains to please me."

The collections of such a man, and from such a country, cannot fail to be valuable to the botanists in Europe; and we have requested that several sets may be sent to England, which he will (Mr. Zeyher) be able to afford at the price of 2*l.* the 100 species.

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