## II. - THE EDUCATION OF AN ENGINEER

ANSTRUTHER is a place sacred to the Muse; she inspired (really to a considerable extent) Tennant's vernacular poem ANST'ER FAIR; and I have there waited upon her myself with much devotion. This was when I came as a young man to glean engineering experience from the building of the breakwater. What I gleaned, I am sure I do not know; but indeed I had already my own private determination to be an author; I loved the art of words and the appearances of life; and TRAVELLERS, and HEADERS, and RUBBLE, and POLISHED ASHLAR, and

PIERRES PERDUES, and even the thrilling question of the STRING-COURSE, interested me only (if they interested me at all) as properties for some possible romance or as words to add to my vocabulary. To grow a little catholic is the compensation of years; youth is one-eyed; and in those days, though I haunted the breakwater by day, and even loved the place for the sake of the sunshine, the thrilling seaside air, the wash of waves on the seaface, the green glimmer of the divers' helmets far below, and the musical chinking of the masons, my one genuine preoccupation lay elsewhere, and my only industry was in the hours when I was not on

duty. I lodged with a certain Bailie Brown, a carpenter by trade; and there, as soon as dinner was despatched, in a chamber scented with dry rose-leaves, drew in my chair to the table and proceeded to pour forth literature, at such a speed, and with such intimations of early death and immortality, as I now look back upon with wonder. Then it was that I wrote VOCES FIDELIUM, a series of dramatic monologues in verse; then that I indited the bulk of a covenanting novel - like so many others, never finished. Late I sat into the night, toiling (as I thought) under the very dart of death, toiling to leave a memory behind me. I feel moved to thrust aside the curtain of the years, to hail that poor feverish idiot, to bid him go to bed and clap VOCES FIDELIUM on the fire before he goes; so clear does he appear before me, sitting there between his candles in the rose-scented room and the late night; so ridiculous a picture (to my elderly wisdom) does the fool present! But he was driven to his bed at last without miraculous intervention; and the manner of his driving sets the last touch upon this eminently youthful business. The weather was then so warm that I must keep the windows open; the night without was populous with moths. As the late darkness deepened, my literary tapers beaconed forth more brightly; thicker and thicker came the dusty night-fliers, to gyrate for one brilliant instant round the flame and fall in agonies upon my paper. Flesh and blood could not endure the spectacle; to capture immortality was doubtless a noble enterprise, but not to capture it at such a cost of suffering; and out would go the candles, and off would I go to bed in the darkness raging to

think that the blow might fall on the morrow, and there was VOCES FIDELIUM still incomplete. Well, the moths are - all gone, and VOCES FIDELIUM along with them; only the fool is still on hand and practises new follies.

Only one thing in connection with the harbour tempted me, and that was the diving, an experience I burned to taste of. But this was not to be, at least in Anstruther; and the subject involves a change of scene to the sub-arctic town of Wick. You can never have dwelt in a country more unsightly than that part of Caithness, the land faintly swelling, faintly falling, not a tree, not a hedgerow, the fields divided by single slate stones set upon their edge, the wind always singing in your ears and (down the long road that led nowhere) thrumming in the telegraph wires. Only as you approached the coast was there anything to stir the heart. The plateau broke down to the North Sea in formidable cliffs, the tall out-stacks rose like pillars ringed about with surf, the coves were overbrimmed with clamorous froth, the sea-birds screamed, the wind sang in the thyme on the cliff's edge; here and there, small ancient castles toppled on the brim; here and there, it was possible to dip into a dell of shelter, where you might lie and tell yourself you were a little warm, and hear (near at hand) the whin-pods bursting in the afternoon sun, and (farther off) the rumour of the turbulent sea. As for Wick itself, it is one of the meanest of man's towns, and situate certainly on the baldest of God's bays. It lives for herring, and a strange sight it is to see (of an afternoon) the

heights of Pulteney blackened by seaward-looking fishers, as when a city crowds to a review - or, as when bees have swarmed, the ground is horrible with lumps and clusters; and a strange sight, and a beautiful, to see the fleet put silently out against a rising moon, the sea-line rough as a wood with sails, and ever and again and one after another, a boat flitting swiftly by the silver disk. This mass of fishers, this great fleet of boats, is out of all proportion to the town itself; and the oars are manned and the nets hauled by immigrants from the Long Island (as we call the outer Hebrides), who come for that season only, and depart again, if "the take" be poor, leaving debts behind them. In a bad year, the end of the herring fishery is therefore an exciting time; fights are common, riots often possible; an apple knocked from a child's hand was once the signal for something like a war; and even when I was there, a gunboat lay in the bay to assist the authorities. To contrary interests, it should be observed, the curse of Babel is here added; the Lews men are Gaelic speakers. Caithness has adopted English; an odd circumstance, if you reflect that both must be largely Norsemen by descent. I remember seeing one of the strongest instances of this division: a thing like a Punch-and-Judy box erected on the flat grave-stones of the churchyard; from the hutch or proscenium - I know not what to call it - an eldritchlooking preacher laying down the law in Gaelic about some one of the name of POWL, whom I at last divined to be the apostle to the Gentiles; a large congregation of the Lews men very devoutly listening; and on the outskirts of the crowd, some of the town's

children (to whom the whole affair was Greek and Hebrew) profanely playing tigg. The same descent, the same country, the same narrow sect of the same religion, and all these bonds made very largely nugatory by an accidental difference of dialect!

Into the bay of Wick stretched the dark length of the unfinished breakwater, in its cage of open staging; the travellers (like frames of churches) over-plumbing all; and away at the extreme end, the divers toiling unseen on the foundation. On a platform of loose planks, the assistants turned their air-mills; a stone might be swinging between wind and water; underneath the swell ran gaily; and from time to time, a mailed dragon with a window-glass snout came dripping up the ladder. Youth is a blessed season after all; my stay at Wick was in the year of VOCES FIDELIUM and the rose-leaf room at Bailie Brown's; and already I did not care two straws for literary glory. Posthumous ambition perhaps requires an atmosphere of roses; and the more rugged excitant of Wick east winds had made another boy of me. To go down in the diving-dress, that was my absorbing fancy; and with the countenance of a certain handsome scamp of a diver, Bob Bain by name, I gratified the whim.

It was gray, harsh, easterly weather, the swell ran pretty high, and out in the open there were "skipper's daughters," when I found myself at last on the diver's platform, twenty pounds of lead upon each foot and my whole person swollen with ply and ply of woollen underclothing. One moment, the salt wind was whistling round my

night-capped head; the next, I was crushed almost double under the weight of the helmet. As that intolerable burthern was laid upon me, I could have found it in my heart (only for shame's sake) to cry off from the whole enterprise. But it was too late. The attendants began to turn the hurdy-gurdy, and the air to whistle through the tube; some one screwed in the barred window of the vizor; and I was cut off in a moment from my fellow-men; standing there in their midst, but quite divorced from intercourse: a creature deaf and dumb, pathetically looking forth upon them from a climate of his own. Except that I could move and feel, I was like a man fallen in a catalepsy. But time was scarce given me to realise my isolation; the weights were hung upon my back and breast, the signal rope was thrust into my unresisting hand; and setting a twenty-pound foot upon the ladder, I began ponderously to descend.

Some twenty rounds below the platform, twilight fell. Looking up, I saw a low green heaven mottled with vanishing bells of white; looking around, except for the weedy spokes and shafts of the ladder, nothing but a green gloaming, somewhat opaque but very restful and delicious. Thirty rounds lower, I stepped off on the PIERRES PERDUES of the foundation; a dumb helmeted figure took me by the hand, and made a gesture (as I read it) of encouragement; and looking in at the creature's window, I beheld the face of Bain. There we were, hand to hand and (when it pleased us) eye to eye; and either might have burst himself with shouting, and not a

whisper come to his companion's hearing. Each, in his own little world of air, stood incommunicably separate.

Bob had told me ere this a little tale, a five minutes' drama at the bottom of the sea, which at that moment possibly shot across my mind. He was down with another, settling a stone of the sea-wall. They had it well adjusted, Bob gave the signal, the scissors were slipped, the stone set home; and it was time to turn to something else. But still his companion remained bowed over the block like a mourner on a tomb, or only raised himself to make absurd contortions and mysterious signs unknown to the vocabulary of the diver. There, then, these two stood for awhile, like the dead and the living; till there flashed a fortunate thought into Bob's mind, and he stooped, peered through the window of that other world, and beheld the face of its inhabitant wet with streaming tears. Ah! the man was in pain! And Bob, glancing downward, saw what was the trouble: the block had been lowered on the foot of that unfortunate - he was caught alive at the bottom of the sea under fifteen tons of rock.

That two men should handle a stone so heavy, even swinging in the scissors, may appear strange to the inexpert. These must bear in mind the great density of the water of the sea, and the surprising results of transplantation to that medium. To understand a little what these are, and how a man's weight, so far from being an encumbrance, is the very ground of his agility, was the chief

lesson of my submarine experience. The knowledge came upon me by degrees. As I began to go forward with the hand of my estranged companion, a world of tumbled stones was visible, pillared with the weedy uprights of the staging: overhead, a flat roof of green: a little in front, the sea-wall, like an unfinished rampart. And presently in our upward progress, Bob motioned me to leap upon a stone; I looked to see if he were possibly in earnest, and he only signed to me the more imperiously. Now the block stood six feet high; it would have been quite a leap to me unencumbered; with the breast and back weights, and the twenty pounds upon each foot, and the staggering load of the helmet, the thing was out of reason. I laughed aloud in my tomb; and to prove to Bob how far he was astray, I gave a little impulse from my toes. Up I soared like a bird, my companion soaring at my side. As high as to the stone, and then higher, I pursued my impotent and empty flight. Even when the strong arm of Bob had checked my shoulders, my heels continued their ascent; so that I blew out sideways like an autumn leaf, and must be hauled in, hand over hand, as sailors haul in the slack of a sail, and propped upon my feet again like an intoxicated sparrow. Yet a little higher on the foundation, and we began to be affected by the bottom of the swell, running there like a strong breeze of wind. Or so I must suppose; for, safe in my cushion of air, I was conscious of no impact; only swayed idly like a weed, and was now borne helplessly abroad, and now swiftly - and yet with dream-like gentleness - impelled against my guide. So does a child's balloon divagate upon the currents of the air, and touch, and slide off

again from every obstacle. So must have ineffectually swung, so resented their inefficiency, those light crowds that followed the Star of Hades, and uttered exiguous voices in the land beyond Cocytus.

There was something strangely exasperating, as well as strangely wearying, in these uncommanded evolutions. It is bitter to return to infancy, to be supported, and directed, and perpetually set upon your feet, by the hand of some one else. The air besides, as it is supplied to you by the busy millers on the platform, closes the eustachian tubes and keeps the neophyte perpetually swallowing, till his throat is grown so dry that he can swallow no longer. And for all these reasons-although I had a fine, dizzy, muddle-headed joy in my surroundings, and longed, and tried, and always failed, to lay hands on the fish that darted here and there about me, swift as humming-birds - yet I fancy I was rather relieved than otherwise when Bain brought me back to the ladder and signed to me to mount. And there was one more experience before me even then. Of a sudden, my ascending head passed into the trough of a swell. Out of the green, I shot at once into a glory of rosy, almost of sanguine light - the multitudinous seas incarnadined, the heaven above a vault of crimson. And then the glory faded into the hard, ugly daylight of a Caithness autumn, with a low sky, a gray sea, and a whistling wind.

Bob Bain had five shillings for his trouble, and I had done what I

desired. It was one of the best things I got from my education as an engineer: of which, however, as a way of life, I wish to speak with sympathy. It takes a man into the open air; it keeps him hanging about harbour-sides, which is the richest form of idling; it carries him to wild islands; it gives him a taste of the genial dangers of the sea; it supplies him with dexterities to exercise; it makes demands upon his ingenuity; it will go far to cure him of any taste (if ever he had one) for the miserable life of cities. And when it has done so, it carries him back and shuts him in an office! From the roaring skerry and the wet thwart of the tossing boat, he passes to the stool and desk; and with a memory full of ships, and seas, and perilous headlands, and the shining pharos, he must apply his long-sighted eyes to the petty niceties of drawing, or measure his inaccurate mind with several pages of consecutive figures. He is a wise youth, to be sure, who can balance one part of genuine life against two parts of drudgery between four walls, and for the sake of the one, manfully accept the other.

Wick was scarce an eligible place of stay. But how much better it was to hang in the cold wind upon the pier, to go down with Bob Bain among the roots of the staging, to be all day in a boat coiling a wet rope and shouting orders - not always very wise - than to be warm and dry, and dull, and dead-alive, in the most comfortable office. And Wick itself had in those days a note of originality. It may have still, but I misdoubt it much. The old minister of Keiss would not preach, in these degenerate times, for

an hour and a half upon the clock. The gipsies must be gone from their cavern; where you might see, from the mouth, the women tending their fire, like Meg Merrilies, and the men sleeping off their coarse potations; and where, in winter gales, the surf would beleaguer them closely, bursting in their very door. A traveller to-day upon the Thurso coach would scarce observe a little cloud of smoke among the moorlands, and be told, quite openly, it marked a private still. He would not indeed make that journey, for there is now no Thurso coach. And even if he could, one little thing that happened to me could never happen to him, or not with the same trenchancy of contrast.

We had been upon the road all evening; the coach-top was crowded with Lews fishers going home, scarce anything but Gaelic had sounded in my ears; and our way had lain throughout over a moorish country very northern to behold. Latish at night, though it was still broad day in our subarctic latitude, we came down upon the shores of the roaring Pentland Firth, that grave of mariners; on one hand, the cliffs of Dunnet Head ran seaward; in front was the little bare, white town of Castleton, its streets full of blowing sand; nothing beyond, but the North Islands, the great deep, and the perennial ice-fields of the Pole. And here, in the last imaginable place, there sprang up young outlandish voices and a chatter of some foreign speech; and I saw, pursuing the coach with its load of Hebridean fishers - as they had pursued VETTURINI up the passes of the Apennines or perhaps along the grotto under

Virgil's tomb - two little dark-eyed, white-toothed Italian vagabonds, of twelve to fourteen years of age, one with a hurdy-gurdy, the other with a cage of white mice. The coach passed on, and their small Italian chatter died in the distance; and I was left to marvel how they had wandered into that country, and how they fared in it, and what they thought of it, and when (if ever) they should see again the silver wind-breaks run among the olives, and the stone-pine stand guard upon Etruscan sepulchres.

Upon any American, the strangeness of this incident is somewhat lost. For as far back as he goes in his own land, he will find some alien camping there; the Cornish miner, the French or Mexican half-blood, the negro in the South, these are deep in the woods and far among the mountains. But in an old, cold, and rugged country such as mine, the days of immigration are long at an end; and away up there, which was at that time far beyond the northernmost extreme of railways, hard upon the shore of that ill-omened strait of whirlpools, in a land of moors where no stranger came, unless it should be a sportsman to shoot grouse or an antiquary to decipher runes, the presence of these small pedestrians struck the mind as though a bird-of-paradise had risen from the heather or an albatross come fishing in the bay of Wick. They were as strange to their surroundings as my lordly evangelist or the old Spanish grandee on the Fair Isle.